



An Investigation of the Assumptions of Self-handicapping:
Youth Responses to Evaluative Threat in the Physical Domain.

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ABSTRACT

Self-handicapping refers to the process whereby people proactively plan excuses for future mistakes. The interpersonal motivation to self-handicap lies in clouding any evaluation of ability, whilst the intrapersonal motivation is the protection of self-esteem. On the surface, self-handicapping represents somewhat health ego-centrism, but if used continually, pathological internalisation is a possibility. This thesis investigated some of the assumptions held for self-handicapping by exploring how a stratified random sample of young people aged between 10 and 16, self-handicapped when faced with an evaluative threat within the physical domain. Study 1 involved the development of a protocol for the experimental manipulation of evaluative threat. The protocol involved giving participants deceptive performance data on their first of two attempts of a sham test of physical ability. Between tests, participants had the opportunity to self-handicap. Study 2 tested the two formulations for self-handicapping and showed that regardless of gender, young people self-handicapped significantly more when they received non-contingent failure performance data compared to participants who received non-contingent success data or participants in a non-evaluative condition. Moreover, differences in self-handicapping were only evident between groups when the excuse was a self-report of performance disruption caused by events experienced in the previous week to the test. No difference between groups was evident in the use of effort withdrawal as a self-handicap. Study 3 explored the onset of self-handicapping with results showing support for a developmental trend in self-handicapping. Results showed that 13-year-olds, in the non-contingent failure feedback group, self-reported that events experienced before the test session would cause a greater level of disruption to

their upcoming performances than their counterparts in a non-evaluative group. This self-handicapping pattern was not evident for 10-year-olds. Study 4 explored the relationship between achievement motivation, trait self-handicapping, non-contingent failure feedback, and self-handicapping. Results showed that for young people, the variables of achievement orientation and non-contingent failure feedback shared a significant relationship with self-handicapping. The variable of trait of self-handicapping shared a small and insignificant relationship. Specifically, young people who determine success by using other references standards and who had been told that they had failed without explanation were more likely to self-handicap than those who use internal references for determining success. Study 5 reported on the relationship between various facets of self-esteem, trait self-handicapping, and self-handicapping. Results showed that when evaluative threat existed because of non-contingent failure feedback, low self-esteem, but not high self-esteem was associated with higher levels of self-handicapping in young people. Moreover, certainty of self-esteem and the trait of self-handicapping were not associated with self-handicapping. Study 6 explored the relationship between self-esteem and self-handicapping using domain-specific measures of self-esteem, and task specific self-efficacy. Results showed a relationship between non-contingent failure feedback, physical self-worth, task specific self-efficacy, and self-handicapping. Specifically, a combination of high perceptions of physical ability, low feelings of efficacy, and non-contingent failure feedback were associated with greater levels of self-handicapping. Implications for teachers and coaches in terms of instructional strategies are discussed in light of each the findings.

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Declarations

I certify that this dissertation contains no material which has been accepted for an award of any degree or diploma in an institute, college or university, and to the best of my knowledge contains no material previously published or written by another person except where due reference is made in the text of the thesis.

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TABLE OF CONTENTS

Acknowledgements	iii
Declarations	iv
Permission to copy	v
TABLE OF CONTENTS	vi
Introduction	1
Literature	7
Attribution Theory and the Concept of Self-handicapping	8
Defining Self-concept and Self-esteem	16
Jones and Berglas' Formulation for Self-handicapping	23
Evidence of the Link Between Self-handicapping and Non-contingent Success Feedback	25
Review of the Evidence for the Berglas and Jones Formulation	33
The Critiques of Snyder and Smith to the Jones and Berglas Formulation	40
Adler's Self-esteem Protection and Self-handicapping	42
Snyder and Smith's Formulation for the Uncertainty Set for Self- handicapping	45
Evidence of the Link between Self-handicapping and Non-contingent Failure Feedback	47
Review of the Evidence for the Smith and Snyder Formulation	56
Berglas' Critiques of the Smith and Snyder Formulation for Self- Handicapping	58
Protocols Used to Investigate the Use of Self-handicapping Within the Physical Domain	66

The Experimental Protocol for this Thesis	76
Study 1 Pilot Study	82
Part A: Identifying a Suitable Physical Skill Test	84
Method	84
Participants	84
Instruments	84
Commonly Used Test of Physical Skill Survey	84
Procedure	85
Statistical Analyses for Part A	85
Part A Results and Discussion	86
Tasmanian Health and Physical Education Teacher's Frequency of Use of Physical Skill Tests	86
Teachers' Perceptions of the Suitability of Five Tests for Assessing Physical Skill Abilities	88
Part B. Development of the Sham Test of Overarm Throwing	89
Method	90
Participants	90
Instrument	91
Overarm Throwing Test	91
Assessment of Face Validity of the Sham Test	92
Procedure	93
Part B Results and Discussion	94
Reliability and Validity of Test Scores for the Sham Physical Skill Test	95
Percentile Scores for the Sham Test	96
General Discussion	98

Study 2: An Examination of Differences in Self-handicapping Responses of Young People Exposed to Evaluative Threat	100
Hypotheses For Study 2	102
Method	104
Participants	104
Instruments	105
Sham Physical Skill Test	105
A Measure of Ego-relevance of the Physical Domain	105
Validation of the Experimental Manipulation	106
Measures of Self-Handicapping Strategies	107
Feedback Contingencies	109
Debriefing Process	110
Procedure	110
Design and Analysis	118
Results	119
Perceived Impediments to Performance	119
Validation of Performance Uncertainty	122
ANOVA for the Main Effects of Feedback Contingency Conditions, Gender, and their Interaction	125
Reduced Practice as a Self-handicap	126
Performance Disruption as a Self-handicap	127
Discussion	129
Self-reports as Self-handicaps	130
Non-contingent Success and Self-handicapping	131
Non-contingent Failure and Self-handicapping	134

Study 3: The Onset of Self-handicapping Behaviour	138
Evidence for the Onset of Self-Handicapping	144
Review of the Evidence for the Onset of Self-handicapping	148
Hypotheses for Study 3	149
Method	150
Participants	150
Measures and Instruments	151
Sham Physical Skill Test	151
Feedback Contingencies	151
Inventories	151
Debriefing Process	151
Procedure	152
Design and Analysis	152
Results	153
Perceived Impediments to Performance	153
Validation of Performance Uncertainty	155
A Test of the Effects of Age Group, Feedback Contingency, and their Interaction with Self-reported Performance Disruption	157
Discussion	161
Study 4: Goal-Orientation and Self-handicapping	166
Overview of Goal Perspective Theory	166
Evidence for the Relationship between Goal Orientation and Self- handicapping	170
Review of Evidence for Goal-Orientation as an Individual Difference Variable in Self-Handicapping	176

Research Aims for Study 4	177
Method	178
Participants	178
Measures and Instruments	178
Sham Physical Skill Test	178
Feedback Contingencies	178
Inventories	179
Measure of Trait Excuse-making and Trait Effort-expended	179
Dispositional Goal Orientation	179
Debriefing process	180
Procedure	180
Design and Analysis	181
Results	183
Perceived Impediments to Performance	183
Validation of Performance Uncertainty	186
The Variables of Goal Orientation, Trait Excuse-making, Trait Effort-expended, and Gender in the Prediction of Self-reported Performance	
Disruption	188
Regression Estimates for Feedback Contingency, Ego-orientation, Task-orientation, Trait Excuse-making, Trait Effort-expended, and Gender	189
Discussion	193
Self-reports of Impediments	193
Goal Orientation and Self-handicapping	195

Study 5: The Relationship between Self-Esteem and Self-handicapping	200
Evidence for the Relationship between Self-Esteem and the Use of Self-handicapping Strategies	201
Research Aims for Study 5	213
Method	214
Participants	214
Measures and Instruments	215
Sham Physical Skill Test	215
Feedback Contingencies	215
Inventories	215
Self-esteem Measure	216
Certainty of Level of Self-esteem	216
Debriefing process	217
Procedure	217
Design and Analyses	217
Results	219
Perceived Impediments to Performance	220
Validation of Performance Uncertainty	222
Reliability Measures for the Independent Variables	224
Regression Estimates for Feedback Contingency Condition, Certainty of Self-esteem and Level of Self-esteem	225
Interpretation of the Model	229
Discussion	230

Study 6: Domain Specific Self-esteem and Self-handicapping	237
Research Aim for Study 6	241
Method	242
Participants	242
Measures	242
Sham Physical Skill Task	242
Feedback Contingencies	242
Inventories	242
Domain Physical Self-esteem	243
Sub-domain Measure of Physical Self-esteem	243
Task Specific Self-efficacy Strength Measure	244
Debriefing Process	244
Procedure	245
Design and Analysis	245
Results	246
Perceived Impediments to Performance	248
Validation of the Performance Uncertainty	249
Reliability Estimates of Independent Variables	251
Regression Estimates for the Variables used to Predict	
Self-handicapping	252
Discussion	255
Summary of Findings and Implications for Further Research	259
Young People use Self-handicaps when Faced with Evaluative Threat to	
Self-concepts	259

Evidence for the Two Formulations for the Uncertainty Set for Self-handicapping	261
Support for the Assumptions for Individual Difference Variables in the use of Self-Handicapping.	262
Evidence for the Onset of Self-Handicapping	262
Evidence for Achievement Goal Orientation and Self-Handicapping	263
Evidence for the Relationship Between Self-Esteem and Self-Handicapping	265
Conclusion	267
Appendix A Survey of Frequency of Use of Physical Skills Test and Suitability of Physical Skills Tests	269
Appendix B Survey of the Frequency of Use and Suitability of Physical Skills Tests	274
Appendix C Face Validity Scale for Overarm Throwing Test	275
Appendix D Information Letter to Principals and HPE Teachers	276
Appendix E Information Letter to Students	277
Appendix F Parental Information Letter	278
Appendix G Consent Forms	280
Appendix H Measure of Ego-relevance for the Physical Domain	282
Appendix I Measure of Perceived Control Over Test Outcome	283
Appendix J Situational Impediments Checklist	284
Appendix K Information Letter to Principals and HPE Teachers for the Project: Self-Handicapping by Australian	286
Appendix L Information Letter for the Project: Self-Handicapping by Australian Youth in the Physical Domain	287

Appendix M Thank You Letter	289
Appendix N Feelings About Sport Questionnaire	290
Appendix O Self-handicapping Scale (Jones and Rhodewalt, 1986)	291
Appendix P Task / Ego Orientation Scale (Duda & Nicholls, 1992)	293
Appendix Q Global Measure of Self-Esteem (Coopersmith, 1990)	295
Appendix R The Physical Self-Perception Profile: Physical Self-worth Sub-scale (Fox, 1989)	298
Appendix S The Physical Self-Perception Profile: Physical Sport Competence Sub-scale (Fox 1989)	300
Appendix T Task Specific Self-Efficacy	302
REFERENCES	303

TABLE OF TABLES

Table 1	Summary of Frequency Analysis of Common Tests of Physical Ability Used in Tasmanian High and Primary Schools	87
Table 2	Summary of Teachers' Perceptions of Suitability of Five Physical Skill Tests	88
Table 3	Summary of Post Hoc Analysis of Mean Differences in Teachers' Perceptions of Suitability For Tests of Physical Skill	89
Table 4	Summary of Descriptive Statistics for Age Groups' Performance Scores on the Sham Test of Overarm Throwing	94
Table 5	Mean and Percentiles for the Sham Test of Overarm Throwing Ability	97
Table 6	Summary of Frequency Statistics for Perceived Impediments to Performance	120
Table 7	Descriptive Statistics for Perceptions of Control	122
Table 8	Summary of ANCOVA Results for Perception of Control	123
Table 9	Mean and Standard Deviation Scores for Self-handicaps	125
Table 10	Summary of ANOVA Results for Feedback Contingency Condition, Gender, and their Interaction	126
Table 11	ANOVA Results for Feedback Contingency Condition, Gender, and their Interaction	127
Table 12	Summary of Mean Differences in Self-reported Performance Disruption by Feedback Contingency Conditions	128
Table 13	Summary of Frequency of Reported Perceived Impediments to Performance	154
Table 14	Descriptive Statistics for Perceptions of Control	155

Table 15 ANCOVA for Perception of Control	156
Table 16 Descriptive Statistics for Self-reported Disruption Scores	158
Table 17 ANOVA for Self-reported Performance Disruption	159
Table 18 Summary of Post Hoc Comparisons for Self-reported Performance Disruption	160
Table 19 Summary of Two-Way Table for Gender for Reported Perceived Impediments to Performance	184
Table 20 Summary of Two-Way Table for Evaluative Conditions for Perceived Impediments to Performance	185
Table 21 Descriptive Statistics for Perceptions	186
Table 22 Summary of ANCOVA Results for Perception of Control	187
Table 23 Summary of Descriptive Statistics for all Variables used in the Regression Analysis	189
Table 24 Summary of Standard Analysis for Variables Predicting of Self-reported Performance Disruption (N = 160)	190
Table 25 Correlation Matrix for Self-report Measures (N = 160)	219
Table 26 Summary of Frequency Analysis for Impediments to Performance	221
Table 27 Descriptive Statistics for Perceptions of Control	222
Table 28 ANCOVA for Post Experimental Perception of Control	224
Table 29 Summary of Descriptive Statistics For Variables Used to Predict Self-reported Performance Disruption	225
Table 30 Summary of Multiple Regression Analysis for Variables Predicting of Self-reported Performance Disruption (N = 160)	227
Table 31 Summary of Frequency Analysis for Impediments to Performance	248
Table 32 Descriptive Statistics for Perceptions of Control	249

Table 33 Summary of ANCOVA Results for Perception of Control	250
Table 34 Descriptive Statistics for Variables Used to Predict Situational Self-Handicapping	251
Table 35 Summary of Standard Analysis for Variables Predicting Self-reported Performance Disruption (N = 196)	253

CHAPTER 1

Introduction

The purpose of this thesis was to test some central assumptions of self-handicapping theory. Jones and Berglas (1978) originally described *self-handicapping* as the process whereby individuals actively plan and use excuses before possible flawed performances. For example, athletes may claim that their injuries will possibly interfere with their upcoming performances. Why would individuals do such things?

There are two different motivations for self-handicapping. The motivation to self-handicap may lie in either a self-presentational emphasis (i.e., impression management) or the maintenance of personal beliefs about competence and control (Arkin & Baumgardner, 1985; Higgins, 1990, Snyder, 1990). Self-presentational concerns seem to be the main motivation for self-handicapping when evaluative conditions are public whereas maintenance of personal beliefs are prime motivation when evaluative conditions are more private.

Within self-handicapping theory is the proposition that individuals use self-handicaps when they experience performance uncertainty on evaluative tasks (Arkin & Baumgardner, 1985). Snyder (1990) highlighted that there is agreement on the proposition that performance uncertainty is an underpinning factor in self-handicapping, but there is disagreement regarding the antecedents to performance uncertainty.

The disagreement regarding the antecedents to performance uncertainty has led to two divergent streams of research. Jones and Berglas (1978) hypothesised a history of non-contingent positive reinforcement leads to self-handicapping.

Alternatively, Snyder and Smith (1982) argued that a history of simple concerns about performance were the antecedent to self-handicapping. Tests of the Jones and Berglas hypothesis have used deceptive non-contingent success performance data to manipulate performance certainty. Investigations of the Snyder and Smith hypothesis have used the implication of failure as the mechanism to manipulate performance certainty.

There is also a difference in the definition of the type of self-handicap in the different streams of research. Jones and Berglas (1978) maintained that people self-handicap by manipulating their behaviours. For example, in one study (Berglas & Jones, 1978), participants manipulated their own behaviour by choosing higher dosages of a drug known to inhibit performance. Snyder and Smith (1982) argued that people self-handicap by using self-avowals of impediments. For example, Smith, Snyder, and Handelsman (1982) documented how individuals self-reported high levels of test anxiety to try to offset the implications of failure.

Subsequent investigations using both protocols have produced evidence for some assumptions for self-handicapping. Nonetheless, there are a number of shortcomings to this evidence. There is no published confirmation for either hypothesis for the physical domain. It is unclear if individuals who are exposed to either protocol will self-handicap when they experience performance uncertainty about outcomes associated with physical ability. It is also unclear what antecedent conditions are associated with the two hypothesised types of self-handicaps for the physical domain. For example, it is unknown if individuals exposed to failure will self-handicap by manipulating their behaviour. Finally, one line of research has shown that *individual difference variables* are associated

with differences in the use of self-handicaps. Higgins (1990) defined individual difference variables as characteristics normally associated with personality.

There is documented evidence that supports assumptions for a variety of individual difference variables, such as self-esteem (Harris, Snyder, Higgins, & Schrag, 1986), self-esteem certainty (Harris & Snyder, 1986), gender (Berglas & Jones, 1978), trait self-handicapping (Carron, Prapavessis, & Grove, 1994; Hausenblas & Carron, 1996; Prapavessis & Grove, 1998; Rhodewalt, Saltzman, & Wittmer, 1984), and achievement goal orientation (Ryska, Yin, & Boyd, 1999). Nonetheless, evidence for the assumptions holding for the physical domain is limited because there is no published evidence, and where there is evidence, the protocols have not included an experimental manipulation of performance certainty. Also, tests of the assumptions are limited in terms of the sample demographics.

The overarching aim of the studies in this thesis was to investigate how young people responded to evaluative threat that was specific to the physical domain. Young people were the target population for this thesis for three reasons. First, there is little literature that describes the self-handicapping concept as it relates to young people. Second, where there is literature, the evidence shows young people use self-handicaps in different ways to adults. Finally, as self-handicapping represents somewhat health ego-centrism, but if used continually, pathological internalisation is a possibility, it is necessary to understand how young people respond to evaluative threat across domains to help educators and coaches avoid dysfunctional instructional strategies.

The review of literature structure is in terms of the key assumptions tested in this thesis. The assumptions that formed the basis of the research questions that guided the investigations are as follows:

1. Some individuals will respond to evaluative threat by externalising the cause of possible flawed performance to factors other than ability (Higgins, 1990).
2. The motive to self-handicap is concerns about performance uncertainty. There are two hypotheses for the antecedents of performance uncertainty with each hypothesis predicting differing types of self-handicaps (Berglas & Jones, 1978; Snyder & Smith, 1982).
3. Individual differences in personality and gender are assumed to cause differences in self-handicapping (Higgins, 1990; Rhodewalt, 1990; Self, 1990).

In the review of literature, I have documented the evidence for each of the aforementioned assumptions. These limitations involved methodological concerns, limited testing of the assumptions in the physical achievement domain, and a lack of testing with differing populations. Addressing these limitations formed the research aims. The research aims were as follows:

1. The first research aim was to develop a sham test of physical ability and associated performance data to use in the remaining studies (Study 1).
2. The second research aim was to test the two hypotheses for the antecedent of performance uncertainty (Study 2).
3. An associated aim was to establish if specific types of handicapping behaviour

were associated with specific types of antecedents and gender to performance uncertainty.

4. A third research aim was to examine the onset of self-handicapping behaviour (Study 3).
5. The fourth research aim was to determine the relationship between achievement goal orientation, trait self-handicapping, and self-handicapping (Study 4).
6. The final aim was to examine the relationship between self-esteem and self-handicapping (Studies 5 & 6).

To fulfil the aforementioned aims, the research replicated previous experimental protocols (Berglas & Jones, 1978; Smith et al., 1982). The protocol involved a random sample of young people (aged between 13 and 16) who believed that they were to complete two parallel tests of physical ability. The young people did not know that the test was a sham. After the first test, the young people were exposed to the experimental manipulation. The experimental manipulation involved giving participants deceptive first test performance scores. Regardless of their actual performance scores, participants received scores that represented either non-contingent success or non-contingent failure. A non-evaluative control group allowed for comparisons in self-handicapping responses between evaluative groups. After the experimental manipulation, the young people had an opportunity to use mitigating excuses before the second test.

Previous protocols using experimental designs have modified an existing test of ability (i.e., intelligence tests) to enhance the effect of the manipulation. Modifications have normally centred on changing the items of tests in such a

way that they remain realistic, yet unsolvable. There has been no replication of the protocol for the physical domain, so it was necessary to select and modify an existing test of physical skill. Given criticisms (Thompson, 1993) in terms of the threat to external validity of protocols that use sham deceptive performance scores, performance data on the sham test of physical skill was obtained from a population with similar characteristics as the participants in this thesis. The development of the sham physical skill test and the associated performance data that helped determine non-contingent failure and non-contingent success fulfilled the first research aim.

To test the second research aim, I used an experimental manipulation that involved both types of performance feedback (non-contingent success and non-contingent failure) to test the two formulations for the antecedent of performance uncertainty. Moreover, participants were able to select two types of handicaps as mitigating excuses. The outcomes of Study 2 limited the remaining studies to one antecedent condition for performance uncertainty and one type of self-handicap as a mitigating excuse. In Study 3, I investigated the onset of the use of self-reports as self-handicaps using young children (aged 10) and young people (aged 13). The results limited the scope of the remaining studies to young people aged between 13 and 16. In the remaining studies (Studies 4, 5, & 6), I assessed the assumptions related to individual difference variables by having young people complete various self-report measures (self-esteem, trait self-handicapping, self-efficacy, and achievement orientation) and then randomly allocating them to a control or evaluative condition.

Self-handicapping is an effective short-term strategy, but left unchecked it may lead people to be ineffectual in certain performance domains. Classrooms

constitute an obvious potential source of non-contingent feedback and, inevitably, self-handicapping will occur despite the best efforts of teachers to create climates that minimise evaluative threat. This study, by examining the veracity of some assumptions for the climate and personal dispositions that cause young people to self-handicap in the physical domain will enable educators to continue to use or develop specific therapeutic and counselling guidelines to help young people deal with failure.

CHAPTER 2

Literature

Snyder (1990) defined the term *uncertain anticipatory set* as the antecedent conditions that cause people to become so uncertain about the outcomes of their performances on evaluative tasks that they self-handicap. Two hypotheses outline the antecedent conditions for performance uncertainty. Both hold in common the proposition that uncertainty about performance outcomes in evaluative situations elicits self-handicapping. The non-contingent success hypothesis holds that performance uncertainty arises out of an inability to discern what behaviour will replicate previous success (Berglas & Jones, 1978). The self-esteem protection hypothesis holds that self-handicapping arises from concerns over the maintenance of the self-image (Snyder & Smith, 1982).

The two formulations do refer to the same attribution strategy. The similarities are the prerequisite components of self-handicapping: the evaluative threat, the protagonist, the self-handicap, and the bad act. Obviously, there must be a protagonist who anticipates uncertainty about success in an upcoming evaluative performance. In the temporal progression of events, individuals are the authors of the bad acts, and such acts can be linked to sense of self. Self-handicaps operate to obscure and weaken the causal linkage between people's core sense of self and possible flawed performances. For example, the citing of injuries before events provides athletes with ready-made excuses for flawed performances. That is, the athletes can claim that the injuries hindered them from giving performances that reflected their true abilities. This proposition implies that self-handicapping strategy fits under the rubric of attribution theory. There are a variety of models associated with attribution theory and to review each is

beyond the scope of this thesis. In the next section, I have limited the overview of attribution theory to Heider's (1958) original concepts to give a background to attribution theory. Contained within this overview are comments on the contributions of Kelley (1971) and Weiner (1986), specifically in terms of their augmentation and discounting principles and the development of causal dimensions, respectively. What then follows is how self-handicapping fits into the overall framework of attribution theory.

Attribution Theory and the Concept of Self-handicapping

Attribution theory concerns the processes involved in the perception of causation and the consequences of such perception. There is not one but many attribution theories, and the term refers to several different kinds of problems. Heider's (1958) two concepts of personal perception and attributional processes are common to attribution theories. He suggested a useful framework for understanding the conditions that provide observers with information concerning the dispositional characteristics of individuals and, relatedly, for thinking about the conditions under which people are seen to be responsible for outcomes. Heider framed his concepts of how people try to make sense out of their everyday lives within balance theory.

Heider (1958) predicated balance theory on the concept that there are two fundamental types of relations between potentially distinguishable or separate entities: the unit and sentiment relations. Unit relations denote belongingness, and refer to the perceived connections between things. Perceptions of belongingness may be based on such things as spatial and temporal proximity, causality, and ownership.

Heider (1958) used a series of notations to summarise his theory of balance. In the notations; p is the person whose perceptions are being considered; o is the other person or entity being perceived by p; x is a third entity (e.g., an act); U denotes a unit relation, such that things belong together, notU denotes a non-unit relation, designating that things do not belong together; L denotes a positive sentiment (e.g., approval), and DL denotes a negative sentiment designating rejection. Using these notations, Heider outlined how people perceived and interacted with their world.

Central to balance theory (Heider, 1958) is the concept that people try to achieve a balanced state in which the entities comprising any situation and the feelings about them fit together without stress. For example, using Heider's notations, if person p sees another person o engage in an act x, p is likely to perceive o and x as forming a causal based unit (o - - U - - x). Alternatively, if p regards o as having no involvement with x, p will perceive o and x as not forming a unit relation (o - - notU - - x).

Whereas unit relations refer to the connectedness between entities, sentiment relations refer to the subjective valuations placed on those entities. At a basic level, Heider (1958) outlined two: positive and negative relations. The use of words such as liking, admiring, and approving indicate a positive sentiment. Words such as disliking, rejecting, and disapproving convey negative sentiments. In the previous example, a positive sentiment would exist if p perceives that o approves of their act x, (o - - L - - x). A negative sentiment towards the act would exist where p perceives that o disapproves of x, (o - - DL - - x).

Heider (1958) asserted that people strive to achieve a balanced state, so that the entities in the situation, and the feelings about them, fit together without

stress. He argued that sentiment relations of a certain value would parallel unit relations of a similar value. For example, if individuals like something that they have done (p - - L - - x), they will tend to own the act or claim the act (p - - U - - x) as well. Similarly, if individuals perceive that they have done something (p - - U - - x) that they do not approve of (p - - DL - - x) this will create an unbalanced state. Individuals in the unbalanced state (p - - DL - - x) will experience stress and pressure to move back to a balanced state by disowning the behaviour (p - - notU - - x) or changing their sentiment towards it (p - - L - - x). Individuals can attribute the outcomes of behaviour either internally to themselves (personal force) or externally to the environment (environmental force). Effective personal force is comprised of the attributional factors of ability and effort, and effective environmental force is composed of the attributional factors task difficulty and luck.

According to Heider (1958), the interaction between the personal force of ability and the environmental force of task difficulty yielded a separate dimension referred to as *can* (or *cannot*). This suggestion is sensible because if a task is difficult and yet accomplished, individuals can perceive that it must be due to great ability but, depending on the difficulty of the task and the ability of the person, several other attributions can give rise to the can or cannot dimension. Heider included the highly unstable factor of luck into his attributional processes. The environmental factor of luck can change favourably or unfavourably the outcome in an unsystematic way. Heider reasoned that the personal and the environmental components of causation and the behavioural outcomes are the result of the interaction between personal forces and impersonal forces.

this factor, Weiner classified attributions as being either controllable or uncontrollable. Individuals make control attributions when they perceive that the outcome of a task is under their control. Conversely, an uncontrollable attribution is one where individuals perceive that the outcomes on tasks are not under their control.

People try to determine the causes of their behaviours and to avoid links to bad outcomes. Depending upon the circumstances of most performances, people will make causal attributions to make their lives stable and predictable. Causal attribution style is the generally consistent manner in which people tend to account for outcomes. Nonetheless, there is a tendency for individuals to attribute their success to their own efforts, abilities, or dispositions but attribute failure to luck, task difficulty, and other external causes (Heider, 1958; Kelley, 1971, 1973).

Kelley's (1971) covariation principle gives a framework for understanding the determinants of internal and external attributions. According to the principle, people make external attributions when the performance of others agrees (covaries) with their performances. Alternatively, people make internal attributions if the performance of others disagrees (lacks covariation) with their performances. People use three pieces of information to determine if others' performances covary or lack covariation. These are consistency, distinctiveness, and consensus. Consistency refers to the frequency that an individual exhibits the behaviour in a particular setting. Distinctiveness refers to the degree to which an individual exhibits the behaviour in other settings. Consensus refers to the number of other individuals exhibiting the behaviour in a particular setting. In Kelly's covariation principle, when people decide that their behaviour is

In essence, attributions are estimates of the causes of behaviour or someone else's behaviour. Later researchers refined and reshaped the attributional dimensions. For example, Weiner (1972; 1985; 1986) elaborated Heider's (1958) original four main factors by reconstructing them into two main causal dimensions. Weiner labelled these two dimensions stability and locus of control. The stability attribution dimension concerns the extent to which individuals believe that the cause of behaviour is due to changeable features. Stable attributions reflect the belief that permanent personality traits or environmental features cause the behaviour. Unstable attributions reflect the belief that variable traits or environmental features cause the behaviour.

Weiner (1972) described the second dimension of locus of control as whether or not people believe that they are personally in control of what happens to them. In this dimension, controllable attributions reflect the belief that behaviour is under voluntary control. Weiner reasoned that people who exhibit internal control, tend to believe that their behaviours influence outcomes. Those who exhibited external control tend to attribute their outcomes to outside forces such as fate, chance, and other people.

Weiner (1972) also incorporated Heider's four main factors (*effort, ability, task difficulty, and luck*) into his classification scheme for causal attributions. In the taxonomy, Weiner classified ability as a stable internal factor and effort as an unstable internal factor. Both ability and effort are internal or personal in nature. Nevertheless, ability is relatively unchanging and effort is constantly changing. Conversely, task difficulty and luck are external in terms of locus of control. Task difficulty is relatively stable and unchanging and luck is unstable and variable. Weiner also added the factor of controllability to his framework. Under

this factor, Weiner classified attributions as being either controllable or uncontrollable. Individuals make control attributions when they perceive that the outcome of a task is under their control. Conversely, an uncontrollable attribution is one where individuals perceive that the outcomes on tasks are not under their control.

People try to determine the causes of their behaviours and to avoid links to bad outcomes. Depending upon the circumstances of most performances, people will make causal attributions to make their lives stable and predictable. Causal attribution style is the generally consistent manner in which people tend to account for outcomes. Nonetheless, there is a tendency for individuals to attribute their success to their own efforts, abilities, or dispositions but attribute failure to luck, task difficulty, and other external causes (Heider, 1958; Kelley, 1971, 1973).

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consistent but the situation is not distinct, and there is no consensus, they then usually form an internal attribution. Kelley labelled this type of attribution as an actor attribution because individuals perceive themselves to be the cause of the behaviour. For example, in the circumstances where an athlete defeats an opponent to whom everyone else has lost, the athlete will attribute the win to an internal cause such as ability. There is consistency (I played well), the situation is not distinct (I have beaten other players), and there is no consensus (no-one else has beaten this opponent). Conversely, if the same athlete defeats an opponent that everyone else has beaten, then the athlete is likely to attribute the win to an external cause such as their opponent's low ability (everyone beats this opponent, this only occurs in tennis, and everyone has beaten this opponent in this situation). Kelley called this type of attribution a target/entity attribution, as individuals believed that another person or an inanimate object caused their behaviour.

Contained within the theory of covariation (Kelley, 1971) are the principles of augmentation and discounting. The principles outline how people can take advantage of using attributions to either weaken the link or strengthen the link to performance outcomes. In the discounting principle, people give attributions for outcomes that weaken the link between outcome and performance (i.e., discounting). Alternatively, people can make attributions that strengthen the link between ability and outcome (i.e., augmentation). For example, if an individual gives an attribution for a failure that implies that factors other than ability caused the failure, others will find it difficult to question the individual's ability because of the attribution.

Literature (Miller & Ross, 1975; Snyder, Stephan, & Rosenfield, 1978) that deals with the *self-serving biases* in attributions is another example of how people use attributions to maintain balance. The self-serving bias literature describes how people make attributions that are self-directed and skewed so that failures are externalised and successes internalised. Research (Arkin, Appelman, & Burger, 1980; Baumeister & Jones, 1978; Riess, Rosenfeld, Melburg, & Tedeschi, 1981; Weary, 1979) has confirmed the assumption that individuals make self-serving attributions. Miller and Ross in their review of the research documented that the self-serving bias has two parts. First, there is the ego-enhancing strategy of attributing one's success to internal causes. Second, there is an ego-protecting strategy of attributing failures to external causes.

In general, attribution theory contains the assumption that individuals, in an effort to make sense out of their interaction with the world, alter the circumstances of outcomes on achievement tasks by making excuses. One use of excuses is that they allow individuals to maintain a sense of being good and in control. In particular, people can make internal or external attributions based on their perception of others' behaviours and their own. Moreover, it seems that people make attributions in a skewed fashion so that they maintain a favourable view of their own behaviour. As a form of excuses, self-handicapping can be seen as a strategy that fulfils a similar function as post hoc attributions.

Self-handicapping is a subtle strategy designed to influence the attribution logic surrounding a particular performance (Self, 1990). For example, people who self-handicap before evaluative situations have ready-made excuses available for flawed performances (i.e., I told you I would fail because of this injury). Moreover, some researchers (Snyder, 1990) propose that self-

handicapping is a form of reality negotiation aimed at preserving important self-theories and a sense of control (i.e., I knew I would fail because of the injury). One of the fundamental features of self-handicapping is its pre-emptive and proactive nature. One hypothetical outcome of using self-handicaps is that they might allow individuals to augment ability attributions in the case of success and discount ability attributions in the case of failure (Arkin, Oleson, Shaver, & Schneider, 1998). The proposed logic is: I must be good because I succeeded despite the handicap (augmentation), or I failed but it was the fault of the handicap (discounting). This logic is consistent with an assumption within attribution theory that individuals are able to adopt both a present and future perspective. Individuals use of self-handicaps as self-protective behaviour in anticipation of potential negative outcomes.

The overview of attribution theory also underscored the concept that in using attributions, individuals have to adopt a detached perspective in the sense of being able to contemplate the outcome of their actions from the point of view of an observer. The use of self-handicaps also requires people to adopt a detached perspective because they must assess whether or not the audience will perceive the handicap as legitimate (Self, 1990). Also, individuals who self-handicap show the capacity to appraise the implications of various outcomes for the relevant aspects of their self-theory from within both a present and future orientated perspective.

In sum, the aforementioned section has positioned self-handicapping within the rubric of attribution theory. People use self-handicaps to help them control the perception of causation. Self-handicaps when used as mitigating excuses have similar patterns to the post hoc attributions people make and similar

proposed affective outcomes for the individuals who use them. There is common agreement that self-handicaps are a self-defensive strategy designed to protect self-esteem. An obvious question raised is why people feel the need to protect the self. In the next section, I have provided an overview of self-concept and self-esteem to demonstrate their influence in the behaviour of individuals.

Defining Self-concept and Self-esteem

Within the literature, the term *self* has come to mean an individual's awareness or perception of his or her own personality. Aitken (1997) credited James (1890) as the first psychologist to use the term self to represent a concept that individuals possess identities that they consciously know about and experience. In Hattie's (1992) review of self-concept, he outlined that in terms of the relationship between the self and self-concept, the basic argument is that entwined with the concept of the self is knowledge about self. He outlined that the self and the self-concept are part of a cognitive construct with the self-concept being more than the knower and the known, but also related to the process of knowing. Hence, conceptions of self are cognitive appraisals. The appraisal process involves people making value statements about their behaviours that may be good or bad, rational or irrational, appropriate or inappropriate, reasonable or unreasonable, justified or unjustified.

A confusion of terms is apparent in the literature that deals with self-concept and self-esteem (Greenier, Kernis, & Waschull, 1995). *Self-concept* and *self-esteem* have often been used synonymously, but for the purpose of clarity the following will apply for this thesis. Self-concept refers to self-description, where individuals build up a multifaceted picture of themselves from identity

statements that refer directly to their lives (Fox & Corbin, 1989): for example, I am a provider; I am a father. Self-esteem refers to the attitude towards the self (Rosenberg, 1965a). Campbell (1990) aptly defined self-esteem as “ the awareness of good (excellence) possessed by oneself” (p. 539). Implied within the definition of self-esteem is people determine what *good* is and that it may refer to all aspects of their self-concept, but the assessment of good does not necessarily imply any moral code, and self-esteem may be based on negative social characteristics. For example, an individual’s ability to subvert the rules in a game may be necessary for acceptance into some teams and may provide a source of self-esteem to the individual. Self-esteem then is the feeling that “I am an OK person,” or “I am very good at subverting the rules”, depending upon the terms of reference used to define OK.

The concept of self-esteem as an attitude occurs in other definitions (Hattie, 1992). Greenier et al. (1995) argued that if some individuals can estimate that they are OK people, others can have the feeling that they are not OK people. In this conceptualisation, self-esteem can be high or low, or anywhere between the two end points. Typically, measures of self-esteem have used a continuous scale reflecting this conceptualisation. For example, Rosenberg’s (1965a) Self-Esteem Scale uses a series of self-report items to categorise people into high and low self-esteem groups. One consistent observation of research following this conceptualisation is that individuals change their emotions dependent upon their *level of self-esteem*. The term level of self-esteem refers to the relatively stable baseline feelings of self-worth (Greenier et al., 1995). High self-esteem is associated with positive affect and low self-esteem is associated with negative affect. For example, compared to people with high self-esteem, those with

relatively low self-esteem tend to experience intense negative emotions. Relative to highs, low self-esteem people tend to be more anxious, depressed, and lonely (Leary, 1983).

Nevertheless, Greenier et al. (1995) outlined that not all highs (or lows) are the same because people experience short-term fluctuations in their baseline feelings of global self-esteem. These fluctuations in self-esteem are variously defined as *self-esteem stability* or *self-esteem certainty* (Harris & Snyder, 1986). The argument is that people possess both characteristic self-feelings that are relatively stable and transcend specific contexts along with more transient self-feelings that are contextually based and subject to momentary fluctuations. For example, James (1890) wrote of “a certain average tone of self-feeling which each one of us carries about with him, and which is independent of the objective reasons we may have for satisfaction and discontent” (p. 306). Moreover, he argued that one’s feelings of self-worth fluctuate as a function of the ratio of one’s successes to one’s pretensions (i.e., self-esteem stability). Similarly, Rosenberg (1986) wrote that baseline feelings of global self-feelings changed only gradually over time, but people also possess “barometric” self-feelings, which are subject to rapid, moment to moment fluctuations.

Researchers have used different measuring techniques to assess self-esteem certainty and level (Greenier et al., 1995). Measures of level of self-esteem typically involve a battery of self-report measures whereas measures of self-esteem certainty typically include people making self-assessments about how they feel about themselves at a precise point of time. Greenier et al. reported that the measurement of the two constructs usually occurs sequentially. Typically, people complete a level of self-esteem measure followed by a measure of self-

esteem certainty. They reported that there is no evidence that self-esteem certainty differs among individuals with low, moderate, or high levels of self-esteem.

Greenier et al. (1995) suggested two factors that affect the certainty of self-esteem. The degree to which people are *ego-involved* in their everyday activities is associated with certainty of self-esteem. People who are ego-involved typically use external measures to assess personal ability and consequently, their estimates of self-worth are constantly put “on the line” as the external measures may constantly change. For example, the information people continually experience that pertains to aspects of themselves can range from positive (task success, compliments) to negative (task failure, insults). Moreover, people often engage in self-evaluative processes in the absence of explicit externally provided feedback (Did I play as well as I played last time?). deCharms (1968) suggested that people who are ego-involved characteristically link their feelings of self-worth to these types of specific, frequently experienced, and potentially inconsistent pieces of evaluative information. Consequently, the more weight people place on specific evaluative information in determining their feelings of self-worth, the more likely these feelings are to fluctuate. There is empirical evidence to support this assumption (Kernis, Cornell, Sun, Berry, & Harlow, 1993; Washull & Kernis, 1996).

Certainty of self-esteem is also associated with a poorly developed self-concept. Typically, people who have poorly developed self-concepts tend to rely on specific evaluative information, thereby contributing to their unstable self-esteem. Thus, the less people know about themselves the greater the risk of them having less well anchored feelings of self-worth (Greenier et al., 1995). If the

evaluative information is non-contingent, then it becomes a potential contributing factor to the development of uncertain self-esteem. Berglas (1985) suggested several ways that non-contingent information contributes to poorly developed self-concepts, ego-involvement, and uncertain self-esteem. Non-contingency of information may prevent recipients from achieving a clear understanding and appreciation of their own abilities. Also, because the source's conveyed sentiments are unreliable, recipients of the feedback may lack clearly defined reflected appraisals of their self-worth. Finally, because some forms of non-contingency link specific information to one's overall sense, self-worth is more likely to fluctuate as a function of specific evaluative information.

To this point, the overview of self-esteem has focused on two aspects: level of self-esteem and certainty of self-esteem. A final point that needs to be articulated is the conceptualisation of self-esteem in terms of its dimensionality. A number of researchers (Baumeister, 1993; Fox & Corbin, 1989; Kernis et al., 1993) have suggested that self-esteem is a multi-dimensional construct, similar to the self-concept construct. Hattie (1992) suggested an intertwining of self-esteem and self-concept because the self-concept is not a collection of rational perceptions. Peoples' perceptions of concepts differ at any particular time. Historically, researchers defined and measured self-esteem as a unidimensional construct (Greenier et al., 1995). This approach has been widely criticised because it does not acknowledge the different weightings and relationships among the complex of elements that contribute to overall feelings of self-regard. The recognition that evaluative self-perceptions can vary depending upon the dimension resulted in the acceptance that self-esteem is multidimensional. For example, research has shown that children as young as seven and eight are able

to judge themselves differently according to the dimension of their lives being addressed (Harter, 1985; Marsh, Barnes, Cairns, & Tidman, 1984).

The concept of multidimensionality is evident in several models of self-esteem. Shavelson and colleagues (Shavelson & Bolus, 1982; Shavelson, Bolus, & Keelsling, 1983; Shavelson, Hubner, & Stanton, 1976) suggested a hierarchical model of self-esteem. There are several versions of the model, but the generally agreed model (Shavelson et al., 1976) has seven defining features. These seven features are: (a) concepts are structured so that people can categorise a vast amount of information about themselves; (b) they are multifaceted; (c) they are hierarchical; (d) the general self-concept is stable but as one descends the hierarchy, self-concept becomes less stable; (e) self-concepts develop and become increasingly multifaceted as an individual develops; (f) the self-concept has both an evaluative and a descriptive dimension, and (g) the self-concept can be distinguished from other constructs.

The model's organisation features a network of *domain-specific constructs*. These domains represent the dimensions of academic, physical, or social self, with a global self-construct at the apex. Lower levels in the hierarchy are increasingly specific. For example, maths and english abilities are in the academic domain. The physical domain has always been represented in such models and is typically hypothesised to consist of two subdomain constructs of physical appearance and physical ability. The model (Shavelson et al., 1976) is attractive because it infers a path by which regular interaction with different aspects of life might modify the more enduring and global elements of self-regard. For example, the satisfaction of having played well in a football game may generalise, if repeated often enough, to heighten feelings of physical and

global self-worth. A series of studies have supported the Shavelson et al. model (Bryne, 1984; Hattie, 1992; Marsh, 1990, 1993; Marsh & Hocevar, 1985). There is evidence (Cantor, Markus, Niedenthal, & Nuris, 1986; Fox & Corbin, 1989) that the feelings held by people for less important self-concepts are lower in strength compared to important self-concepts. For example, Cantor et al. reported how individuals as they moved from college to university, change how they rated the importance of self-concepts associated with sport. The shift in importance occurred because individuals evaluated sport as having a lesser priority at that point in their lives compared to other domains (i.e., academic).

Gardner (1961) highlighted a tendency in society to equate ability to achieve successfully with human value. Covington (1985) noted that therefore, people adopt various behaviours to avoid perceptions of inability. Principally, strategies such as self-handicapping protect self-esteem by circumventing the attributional implications of failure. Self-protective strategies protect peoples' self-views because they can either link or disassociate ability with outcomes. The concept of self-handicapping originated from the work of Jones and Berglas (1978), who suggested that people take an active role in shaping attributions by setting the stage so that self-serving attributions are facilitated. Central to their self-handicapping premise was the notion that, rather than have an accurate view of reality, people desire to have some ambiguity to allow room for self-sustaining and self-embellishing fantasies. Specifically, some people embrace any factor that will reduce personal responsibility for flawed performance.

Jones and Berglas' Formulation for Self-handicapping

Jones and Berglas (1978) suggested that people with tenuous but positive self-concepts might have an increased tendency to engage in self-handicapping by manipulating their behaviour (i.e., consume alcohol). They proposed that the tenuous nature of such self-concepts resulted in individuals being uncertain about replicating successful performances because they feared that any evaluation might confirm that the self-concept was insubstantial. Jones and Berglas asserted such self-concepts developed along two possible pathways. Their first hypothesised pathway focused on an analysis of the meaning and exchange value of positive reinforcement. In this pathway, they focused on the problems that pampered children faced because of a history of unconditional love. Jones and Berglas explained that some pampered children might have difficulty in establishing a confident sense of self, or that they are unconditionally loved, because of confusion about whether social reinforcements that they received were contingent upon adequate performance or whether they signified unconditional love and caring. Jones and Berglas maintained that a problem existed when children suspected or believed that love and esteem were derived from their ability to gratify others. In such circumstances, unambiguous failures would be too threatening to allow.

Jones and Berglas (1978) also suggested that a history of non-contingent positive reinforcement might be a pathway to tenuous but positive self-concepts. The non-contingency of success feedback would cause individuals to be unable to discern the basis for holding a positive self-concept because of the ambiguous nature of the success information. Under such conditions, individuals would experience doubt about their ability to maintain or replicate previous levels of

performance because they do not know what behaviour will replicate success. For example, if individuals experienced non-contingent success regarding their mathematical abilities, the resultant self-concept for maths might be positive, but tenuous, because they are unable to determine why they are good at maths or if they really are good. When confronted by maths tests, such individuals would self-handicap because the outcome of the tests might disconfirm the positive self-concept.

There is evidence to support the concept of Jones and Berglas (1978). To review all the literature is beyond the scope of this thesis: nonetheless, three investigations are reviewed (Berglas & Jones, 1978; Higgins & Harris, 1988; Kolditz & Arkin, 1982). These investigations were chosen because all three studies experimentally manipulated participants' performance certainty by using deceptive performance scores to indicate success (i.e., the non-contingent success hypothesis). Also, two of the studies (Berglas & Jones, 1978; Kolditz & Arkin, 1982) used the same experimental manipulation to test the second pathway proposed by Jones and Berglas. The experimental manipulation of performance certainty involved giving participants a test with no discernable solution and then providing non-contingent success feedback on the first test. After the manipulation, participants were given the opportunity to use a mitigating excuse for possible flawed performances on the second test.

The rationale for the protocol was that it replicated the effects of a history of non-contingent success in creating a positive yet insecure self-concept. Berglas and Jones (1978) argued that participants who completed an unsolvable test would not expect to pass the test, but when they experienced unexpected and unexplained success, they would form positive yet insecure self-concepts for the

evaluated ability. Participants would then be unwilling to submit the tenuous self-concept to evaluation (the parallel test) because of fears that it would be insubstantial, and hence, they would be motivated to use the offered excuse to avoid disconfirmation of their newly formed self-concepts.

A third commonality for the three studies is that they define self-handicapping in terms of the manipulation of behaviour. The manipulation of behaviour as a means of self-handicapping is typically labelled as *behavioural* self-handicapping (Arkin & Baumgardner, 1985). Behavioural handicaps are behaviours that make successful performance less likely (Berglas & Jones, 1978). For example, a behavioural handicap could include the ingestion of drugs, alcohol, or the withdrawal of effort. The use of behaviours as self-handicaps is traditionally associated with the non-contingent success hypothesis for performance uncertainty. Finally, one study (Higgins & Harris, 1988) documents possible alternatives to non-contingent success as the only antecedent to performance uncertainty.

Evidence of the Link between Self-handicapping and Non-contingent Success Feedback

Berglas and Jones (1978) tested the second of their hypothesised pathways in two studies that emphasised the role of non-contingent success feedback. They predicted that participants would self-handicap by electing to take a performance-inhibiting drug rather than a performance-enhancing drug before a retest of intellectual ability on which they had previously received performance feedback that indicated non-contingent success. Also, they investigated if self-handicapping was for private self-protective functions or designed to influence

the attributions of an audience. They argued that, relative to participants who received contingent success feedback, participants who had completed an unsolvable test and received non-contingent success would see their success as unearned, even illegitimate. Faced with a subsequent evaluation, the participants who had received non-contingent success would doubt their capacity to repeat their successes and be highly motivated to handicap their performances by ingesting the drug that provided a mitigating excuse for flawed performance.

In the first study (Berglas & Jones, 1978: Study 1), participants were male and female undergraduate students who were told that the study was designed to investigate the possible effects of two drugs on performance in intelligence tests. Participants were told that they had to complete two parallel tests of a very challenging intelligence test that discriminated the uppermost levels of intellectual ability. The first test would be drug free with the opportunity to take one of the two drugs before the second test. Participants were told not to expect scores above the 70th percentile. The participants were divided into two groups based on different test types. In the *non-contingency success* condition, participants were given test items that contained 80 per cent unsolvable questions and 20 per cent solvable. In the *contingency success* condition, participants received test items that were 80 per cent solvable and 20 per cent unsolvable.

The test procedure involved a research assistant giving participants each test item one at a time to ensure the solvability percentages for each contingency condition. For example, if the participants started to solve too many questions in the unsolvable condition, the research assistant ensured the next test item had an increased level of difficulty. Participants in the non-contingent success condition were always told that they had successfully completed 16 items, whereas in the

contingent success condition, participants received their actual scores. Actual performance scores for participants in the contingent success condition ranged between 9 and 16. As a validation of the experimental manipulation, participants completed a measure of their confidence at solving each test item.

After the first test, a research assistant told participants their scores and commented to all participants that scores were the best seen to date. Participants were then divided into one of two publicity of post-test conditions. In the *public condition*, the research enquired about participant's test scores and in the *private condition*, the experimenter expressly forbade participants to discuss their test scores. The experimenter then informed all participants of a change to the testing conditions. In the new test condition, incorrect answers attracted a penalty, with each incorrect answer being scored as a negative. The authors reasoned that participants would choose not to guess answers and this would increase the likelihood of a lower score on the post-test, thus exacerbating the concern of participants in the non-contingent success group that their self-concept was insubstantial.

All participants then read information about the performance enhancement benefits of one drug (*Actival*) and the performance inhibiting effects of another (*Pandocrin*). Unbeknown to participants, both drugs were placebos and all reports of the effectiveness of the drugs on intelligence performance were a sham. After the drug information, participants viewed a tray of drugs and different dosages. Drug dosages were scored on a scale measure where a dosage of 1 reflected the highest amount of Actival and 9 the highest amount of Pandocrin. Participants were then able to choose a drug and a dosage or to take no drugs at all. Participants then completed a measure on whether they believed

luck or ability contributed to their first test score. The wording for the luck-ability question was a single item where a score of 1 indicated only luck played a part in the performance score and 15 indicated that only ability played a role. The study then concluded.

In terms of the validation measure, there was a large effect ($f = 1.31$) between contingency conditions, with participants in the success condition having significantly higher confidence in giving successful answers than participants in the non-contingent success condition. In terms of participants' perceptions of the cause of their successes, there was a large effect ($f = 1.10$) between contingency conditions, with participants in the contingent success condition attributing their scores more to ability (versus luck) than participants in the non-contingent success condition. In the non-contingency condition, females were more inclined to attribute their performance to luck ($M = 7.0$) than males ($M = 8.36$).

Results illustrated how people are willing to manipulate their behaviour as a means of self-handicapping. In terms of drug choice, in the non-contingent success condition, 59 per cent of participants in the private condition and 60 per cent of participants in the public condition selected Pandocrin (performance-inhibiting drug). In the contingent success condition, 24 per cent of participants in the private condition and by 13 per cent in the public condition selected Pandocrin. In terms of the scale measure of drug dosage, in the non-contingent success condition, the mean dosage level in the private condition was 5.27 and in the public condition, 5.87. Contrastingly, for the contingent success condition, participants in the private condition had a mean dosage level of 3.6 and participants in the public condition had a mean level of 2.15.

There was a large effect ($f = .43$) between success contingency conditions, with participants in the non-contingent success condition electing to take significantly higher dosages of Pandocrin than participants in the success contingency condition. The interaction between contingency condition and gender was also significant ($f = .26$). Separate analysis for gender showed that for males, there was a large effect between contingent conditions ($f = 1.13$), with males in the non-contingent condition ($M = 6.2$) selecting significantly higher dosages of Pandocrin than their counterparts in the success contingent condition ($M = 2.25$). Results for females showed a medium to large effect ($f = .36$) between contingent conditions, but there was no significant difference between the amount of Pandocrin selected by females in the non-contingent success ($M = 4.9$) and their counterparts in the success contingency condition ($M = 3.9$). An estimate of the power indicated that there might have been insufficient power (.36) to detect a significant result. For both males and females, the variable of publicity was not a significant factor. The gender and success contingency results were replicated in a second study (Berglas & Jones, 1978: Study 2), with males in the non-contingent success condition selecting significantly higher dosages of Pandocrin than all other groups.

Berglas and Jones (1978) interpreted their results, at least the male data, as being consistent with the notion that people self-handicap, but they included some caveats. They reported that participants in a debriefing session revealed that only 2 out of 30 non-contingent success Pandocrin takers explained their drug choice in defensive terms. The remaining Pandocrin choosers explained that their drug choice was arbitrary or that they were trying to help make the experiment work because they had scored 16 out of 20 on the first test and they had more

room to move downward than upward on the scoring scale. The data from the debriefing suggests that some participants did not select Pandocrin for attributional control.

In terms of females not differing across contingency conditions, Berglas and Jones (1978) offered the suggestion that their protocol did not sufficiently threaten females. They based their suggestion on the data from the luck or ability measure as the reason for female results. The results of the comparison between females and males in the non-contingent condition showed that females reported that they perceived that luck was a significant contributor to their outcomes. Berglas and Jones reasoned that females had less reason to self-handicap because they already acknowledge that luck rather than ability cause of their performance outcomes.

Kolditz and Arkin (1982) presented a replication of the Berglas and Jones (1978) findings using a similar protocol. They also reported evidence for a possible impression management link to self-handicapping. Their procedure followed that of Berglas and Jones (1978) study with participants divided into *contingent* and *non-contingent success* conditions based on the degree of solvability of test items. The researchers used the same feedback protocol as Berglas and Jones to distinguish the two conditions. Participants were then selected into two groups based on information about the publicity of their post-test scores. In the *private post-test* condition, participants were informed that their scores would be anonymous whereas, in the *public post-test* condition, participants were told that the experimenter would mark their tests. After the first test and the performance feedback manipulation, all participants were then exposed to the drug manipulation. The drug manipulation followed the protocol

of Berglas and Jones. The dependent measure of drug choice was on a scale with 1 equal to the maximum debilitating dosage and 9 being the maximum facilitating dosage. Participants received different information about the publicity of their drug choice to divide them into either a *public* or a *private drug choice* condition. In the private drug choice condition, the researchers told participants that their drug choices would be anonymous whereas in the public drug choice condition, the researchers told participant that the research assistants would know of their choices.

Koditz and Arkin (1982) asserted that the differing publicity conditions would demonstrate the self-impression management aspects of self-handicapping. They hypothesised that in the non-contingent success condition, participants in the private drug choice condition would not perceive their selection of Pandocrin as a self-handicap because no one would know of their drug choice. Moreover, participants in the private post-test condition would also be less inclined to select Pandocrin because there would be no threat to public self-esteem and hence no reason to self-handicap.

In terms of validating the effectiveness of the success contingency manipulation, there was a large effect ($f = .78$) between contingency conditions for participants' perceptions of confidence in giving correct answers on the first test. Participants in the non-contingent success group were significantly less confident of giving correct answers than participants in the contingent success group. Similarly, there was a large effect ($f = .55$) between success contingency conditions for participants' perceptions of whether luck or ability influenced test outcome. Participants in the non-contingent success group had significantly lower scores (i.e., luck) than participants in the contingency success group.

Tests for the main effects of success contingent condition and publicity of drug choice condition were significant. There was a large effect ($f = .76$) between contingency success groups on the scale measure of drug choice. Participants in the non-contingent success group ($M = 5.9$) chose significantly more Pandocrin than their counterparts in the contingent success group ($M = 7.1$). There was also a large effect ($f = .64$) between publicity of drug choice conditions. Participants in the public drug choice group ($M = 5.3$) chose significantly more Pandocrin than participants in the private drug choice condition ($M = 7.7$). These two effects were subsumed in the predicted interaction between contingency condition and publicity of drug choice. There was a large effect ($f = .41$), with participants in the non-contingent success condition choosing more Pandocrin in the public drug choice condition ($M = 4.0$) than in the private drug choice condition ($M = 7.8$). For participants in the contingency success condition, mean scores for the private and public drug choice conditions were 7.6 and 6.7, respectively.

An initial test for the predicted interaction between success contingency and publicity of post-test scores was not significant. Nevertheless, separate analyses for each post-test condition revealed a significant interaction between publicity of drug choice and success contingency conditions for the public post-test condition but not for the private post-test condition. For the private post-test condition the interaction between success contingency condition and publicity of drug choice resulted in a small to medium effect size ($f = .16$), but a non-significant result. For the public post-test condition, there was a significant result with a medium to large effect size ($f = .37$). Individual comparisons showed that preference for Pandocrin was only present for participants in the non-contingent

success condition and public drug choice condition. For the public post-test condition, 75 per cent of participants in the non-contingent success condition chose Pandocrin compared to 14 per cent in the contingent success condition.

Results (Kolditz & Arkin, 1982) add to the Berglas and Jones (1978) findings in several ways. The data related to the contingency condition supported the non-contingency success hypothesis (Jones & Berglas, 1978). Moreover, Kolditz and Arkin's results confirmed that under some conditions, people seem willing to manipulate their behaviour (i.e., take performance debilitating drugs) to self-handicap. Whereas Berglas and Jones (1978) were unable to draw a distinction as to whether self-handicapping was used for control of self-attributions or for the attributions made by an audience, the data from Kolditz and Arkin's study suggested that people have a greater tendency to self-handicap in the presence of others. Nonetheless, Kolditz and Arkin suggested that their data did not indicate that self-handicapping was solely for self-presentational concerns, but could serve two motives.

Review of the Evidence for the Berglas and Jones Formulation

In sum, the review of literature (Berglas & Jones, 1978; Kolditz & Arkin, 1982) showed that some people, who have experienced non-contingent success after an evaluative test, seem to have a greater tendency to self-handicap compared to people who received contingent success. Also, the evidence showed that these same people manipulated their behaviours to provide mitigating excuses. For example, some people were willing to take a high dosage of a performance-inhibiting drug before an evaluative test, but only after non-contingent success feedback. The evidence for whether people use self-

handicapping to control self-attributions or for impression management is not clear. It is possible that self-handicaps achieve both aims.

The evidence (Berglas & Jones, 1978; Kolditz & Arkin, 1982) is generally consistent with the premise of Jones and Berglas (1978) that a positive yet tenuous self-concept is a precursor to self-handicapping. Moreover, the direction of the results is supportive that non-contingent success feedback on a difficult test creates such self-concepts. The pattern of results from both studies is suggestive that people use self-handicaps as a means of protecting a favourable but fragile self-concept. Nonetheless, there are shortcomings to the evidence. The shortcomings pertain to methodological and applicability concerns.

A key assumption in self-handicapping theory is that people only use self-handicaps when performance outcomes have implications for important aspects of the self (Jones & Berglas, 1978). In the aforementioned studies, there was no measure of ego-relevance. If the outcome of the test of intelligence held no importance, then the tendency to self-handicap may have been underestimated. For example, some participants may have placed a low priority on the outcomes of the test of intelligence and not self-handicapped. These participants may have had lower concerns about how others would view their flawed performances than would participants who highly valued the outcomes. If being “good” at academic intelligence was not of importance to some participants, then it is plausible that they would not self-handicap.

In the original paper on self-handicapping (Jones & Berglas, 1978) the definition of self-handicapping implies that people “find or create impediment” (p. 201). The protocol in both studies limited participants to one particular type of handicap. Moreover, the researchers selected the handicap. Researchers

(Carron, Prapavessis, & Grove, 1994; Snyder 1990) have argued that handicaps that are imposed by researchers could remove the “self” from self-handicapping. Sheppard and Arkin (1989) provided a contrasting viewpoint by maintaining that in most situations, there is a hint of an inherent impediment and that suggesting a handicap to participants does not change the relationship between the dependent variable and the independent variable. This is a valid point: nonetheless, in both studies the imposed handicap was not a hint as maintained by Sheppard and Arkin, but offered to participants in a blatant way. For example, the protocol in both studies (Berglas & Jones, 1978; Kolditz & Arkin, 1982) included giving participants sham information about the performance effects of the two drugs.

Self-handicaps must be salient to be effective (Snyder, 1990). In both studies (Berglas & Jones, 1978; Kolditz & Arkin, 1982), the participants were university students who were screened to ensure they were not current drug users. The inference drawn from this screening is that the university students would not take drugs on suggestion. Nonetheless, the protocol involved participants voluntarily selecting drugs. For some participants, the ethics of ingesting drugs either for performance-enhancement or inhibition, regardless of the circumstances, might have been too severe a handicap. For example, for some participants, the ingestion of a performance-inhibiting drug might have posed moral dilemmas. Berglas and Jones (1978) noted in their method section that the word drugs and intellectual performance appeared in the title of their study. They assumed that participants who volunteered for the study were willing to take drugs, but this assumption was never tested.

In both studies, participants in the contingent and non-contingent success conditions worked on solvable and unsolvable problems, respectively. Higgins

and Harris (1988) argued of the confounding of feedback contingency and test difficulty. They speculated that as participants worked on different tests, they would have suffered from differing levels of performance stress. Thus, the observed differences in self-handicapping responses should have been expected, as they were appropriate to the threat.

In some instances, not rejecting the null hypothesis might reflect Type II errors. The lack of some reported statistical results necessitated only approximations for power and effect size. Estimates of effect sizes and power for completed studies are calculated according to published guidelines (Aron & Aron, 1999). Berglas and Jones (1978) reported that the results of separate analysis showed males but not females self-handicapping after experiencing non-contingency success feedback. For males, there was large effect size and an adequate power level (94%). For females, there was a medium to large effect size across contingency conditions but low cell numbers resulted in insufficient power to detect the effect size. It is possible that the researchers made a Type II error in not rejecting the null hypothesis for females. Similarly, Kolditz and Arkin (1982) did not reject the null hypothesis for the interaction between all three conditions (contingency, publicity of drug choice, & publicity of post-test scores) despite a medium to large effect size. Estimates of power ($< .36$) indicated that there might have been insufficient levels of power to detect a significant difference.

One study (Higgins & Harris, 1988) addressed some of the aforementioned shortcomings. The study investigated the effect of different contingency feedback conditions on the use of alcohol as a self-handicapping strategy in a sample of identified heavy drinkers enrolled in a university course. The sample

was divided into six feedback contingencies conditions: *contingent success*, *non-contingent success*, *contingent failure*, *non-contingent failure*, and *no feedback*. Additionally, there was a *low stress evaluative control* condition. An initial pilot study of the sham test provided performance data, which was used to define each of the contingency conditions.

Participants in the contingent and non-contingent success conditions were told they had done very well on the test and had scored the highest of all the participants. The researchers told participants that their scores were 12 and 21, respectively. In the contingent and non-contingent failure conditions, the researchers told participants that they had done poorly and that they had correctly answered 12 and 6 items, respectively. Participants in the no feedback condition did not receive performance scores. Participants in the low stress evaluative control condition did not complete any evaluation measures. For example, in all other conditions, participants completed an item that assessed perceptions of satisfaction with performance. Moreover, the researchers told participants in the low stress evaluative group not to attempt to solve any test items. The authors asserted that the procedure did not strictly guarantee that each non-contingent feedback participant received non-contingent feedback, or that each contingent feedback participant received contingent feedback, but the procedure at least ensured relative levels of contingency and non-contingency.

Higgins and Harris (1988) addressed the confounding of contingent feedback and task difficulty by having all participants complete the same test. Test instructions asserted that participants were taking part in an investigation of the effects of alcohol on an evaluative test of intelligence and that a concept formation test was a reliable predictor of intelligence. The researchers informed

participants that they would have to complete two tests, with an opportunity to consume alcohol between the tests. The test was comprised of 25 items from the Progressive Matrices test (Ravens, 1956). After the first test, a random selection process allocated participants to one of the performance feedback contingency conditions. All participants completed measures of pre-dinking behaviour, Part A of the Multiple Affect Adjective Checklist (MAACL)(Zuckerman & Lubin, 1965), and the Rosenberg Self-esteem Scale (Rosenberg, 1965b). Following the contingency manipulation, all participants were exposed to the beverage consumption manipulation. Instructions to participants indicated that they could drink as little or as much as they liked, but they could also drink water if they became thirsty. The experimenter then left the room for 12 minutes and returned to take away the unconsumed beverages. All participants then completed Part B of the MAACL and a post-test drinking questionnaire. Part B of the MAACL related to perceived stressfulness of the test conditions.

The researchers assess differences on responses to Part B of the MAACL between contingency conditions to assess the effectiveness of the experimental manipulation. Participants' perceptions of the stressfulness of the test conditions differed significantly across contingency groups and the low stress non-evaluative group. Specifically there was a large effect ($d = 1.05$) with participants in the low stress evaluative group reporting significantly lower levels of stress ($M = 3.8$) than the remaining feedback contingency groups ($M = 5.53$). The principal measure of self-handicapping was the amount of alcohol consumed. A one-way (6 groups) analysis of variance (ANOVA) yielded a significant result, with a large effect size ($f = .46$). Post hoc comparisons between feedback contingency groups indicated that participants in the non-contingent success

group consumed significantly more alcohol ($M = 885$ ml) than participants in the low stress evaluative ($M = 615$ ml), contingent success ($M = 544$ ml), and contingent failure ($M = 581$ ml) groups. Participants in the non-contingent failure condition consumed significantly more alcohol ($M = 779$ ml) than participants in the contingent success condition but not for any other contingency condition.

There are several implications of Higgins and Harris' (1988) research. The result that individuals in the non-contingent success condition drank significantly more alcohol than participants in the contingent success condition is consistent with the original findings of Berglas and Jones (1978). Also, because the procedure used identical tests across the feedback contingency conditions, it provides a clear link between self-handicapping to different feedback conditions rather than to test difficulty. Finally, the finding that non-contingent failure feedback did not have the same affect as non-contingent success on the tendency to self-handicap raises the issue of whether there is a connection between failure and self-handicapping strategy.

In sum, the evidence from Higgins and Harris (1988) strengthens the evidence for the non-contingent success hypothesis because the procedure used the same test across all contingency conditions. Moreover, it provides an indication that failure might not be associated with self-handicapping. Nonetheless, there are criticisms (Snyder & Smith, 1982) of the assumption that there is a link between non-contingent success and self-handicapping and there are gaps in the literature. All the evidence is for self-handicapping in response to experiences of evaluative threat associated with the academic domain. Moreover, no published research details if the assumption holds for young people. Apart from these gaps in the literature, there are two basic criticisms of the non-

contingent success hypothesis. These relate to the procedures used to elicit anxiety about successful performance and the narrowness of the self-handicapping concept. What follows is an overview of the criticisms of the procedures and the alternative hypothesis for the antecedent for self-handicapping (Snyder & Smith, 1982).

The Critiques of Snyder and Smith to the Jones and Berglas Formulation

Snyder and Smith (1982) offered an alternative to a reinforcement history of non-contingent success as the only basis for the uncertainty anticipatory set. They based their revised concept of self-handicapping on criticism centred on the original experimental manipulation (Berglas & Jones, 1978) and the assumptions they had for the affective states of the participants. In a review of the connection between self-doubt and self-handicapping, Snyder and Smith reasoned that Jones and Berglas (1978), in their advocacy that non-contingent success was the only variable in the uncertainty anticipatory set, were restrictive. Snyder and Smith suggested that the findings of self-handicapping following non-contingent success might be explained in terms of whether or not individuals were focusing on avoiding a negative outcome or achieving a positive outcome. They raised the possibility that the quality of the participants' doubts was not taken into account in studies that used a non-contingent success protocol.

Snyder and Smith (1982) suggested that the doubt created in such experiments was confounded. The doubt could be about oneself or merely about some transient outcome on some task. They gave the example that in the original study (Berglas & Jones, 1978), the researchers had hypothesised that participants' harboured high estimates of their own self-worth but, Snyder and

Smith pointed out, this assumption was never tested. Furthermore, they argued that the manipulation of performance certainty with deceptive non-contingent success created a wide confidence interval surrounding participants' positive self-evaluations of their intelligence (e.g., they worried that they were not so gifted as that). In the study (Berglas & Jones, 1978), the researchers told participants that the test was an effective measure of distinctions in intellect at the very highest levels. Snyder and Smith argued that the participants in the study might have entertained two competing self-assessments. Either the participants may have believed that they were special--among the nation's elite on the intellectual dimension--or they were not quite so good; perhaps not as smart as their university peers.

This criticism seems to be valid where manipulation of performance certainty involves sham performance scores. At the core of the criticism is whether the results of these studies can be generalised to real-life situations. For example, participants were given a score and told that their scores were the best so far, but there was no comparison to other scores. In real-life settings, normally there is a comparison of to percentiles to give an indication of performance level. Furthermore, it would seem unlikely that one piece of information--and ambiguous information at that--would be sufficient to threaten university students' self-concepts associated with the academic domain.

Snyder and Smith (1982) widened the self-handicapping concept by suggesting it was akin to Adler's (1926) concept of self-defensive strategies. They based their self-handicapping formulation on Adler's concepts. One legacy of Adler's work is the idea that people are prone to report physical symptoms in an excuse-making function to protect their self-esteem. Before proceeding with a

review of the literature for the Snyder and Smith formulation, I have provided an overview of Adler's concept of self-esteem protection.

Adler's Self-esteem Protection and Self-handicapping

Adler (1926; 1929; 1930) suggested that people employ symptoms as coping strategies to guard a tenuous sense of worth. Though the symptom is frequently a burden, according to Adler (1930) it is a defence against an underlying sense of inferiority. At the core of Adler's (1926) work is the concept that people adopt various safeguarding behaviours to protect self-esteem. Adler regarded the driving force behind personality as the struggle to compensate for subjective feelings of weakness and inferiority by endeavouring to develop feelings of strength and power. Adler labelled this process as the masculine protest.

Adler (1926) theorised that a sense of inferiority was present at birth and that individuals maintained and developed the sense of inferiority through their lives. Adler suggested that the sense of inferiority stemmed from subjective evaluations of both organic and environmental influences. Organic influences involved the ways that individuals reacted to any perceived or real physical weaknesses or disabilities. Adler also included other weaknesses that influenced personality development such as adverse environmental influences (e.g., pampering, neglect as an infant). He suggested that individuals engage in a lifelong struggle to overcome these feelings of inferiority but never truly gain superiority.

Ansbacher and Ansbacher (1967) noted that Adler's work was influenced by Vaihinger's (1925) philosophy of "as if,". As evidence, they noted that Adler adopted the concept of fictional finalism. Vaihinger, in his book *The Philosophy of 'As If'*, contended that the actions of individuals are guided by fictions that

they invent to make their lives seem important and directed. Although such beliefs are not necessarily true, Vaihinger suggested that individual behaviour is organised and controlled by the idea that the beliefs are more than just convenient fictions.

Incorporating this concept into his work, Adler (1930) reasoned that people fashioned their life goals out of their constitutional makeups and personal experiences. He believed that the forces guiding people in their efforts to achieve their goals were their appraisals of their subjective selves and the obstacles and opportunities that they encountered. Adler saw the individual fictional goal being compensatory. At one level, Adler held the belief that guiding fictions provided a tool for individuals to overcome inferiorities. Yet, at another level, the fictional goal was itself regarded as a compensation for felt inferiorities.

In further developing his theory, Adler (1930) adopted the view that a universal guiding motive of achieving superiority influenced individual behaviour. In using the term "striving for superiority", Higgins (1990) argued that Adler meant the overcoming of external obstacles and the achieving of a kind of self-actualisation. Individuals in their struggles to achieve superiority developed unique lifestyles consisting of learned approaches to the demands of life and techniques for coping with their inferiorities. Adler suggested that the creative self organised these individual lifestyles. Specifically, the self reacted with the person's final fictionalisms to determine a chosen lifestyle.

Adler (1930) theorised that normal individuals, because of the struggle to achieve superiority, would be motivated to overcome their inferiorities by engaging in largely task-oriented and socially contributing types of behaviour. In contrast, neurotic individuals would feel overwhelmed by the magnitude of their

inferiorities and be discouraged from overcoming them in socially useful ways. Adler believed that from this process, neurotic individuals might develop an inferiority complex, which in turn could foster a superiority complex. Consequently, neurotic individuals would be motivated towards protecting their prestige, avoiding defeat, and sustaining the illusion of working towards true superiority.

Adler (1930) recognised that when individuals realised that they had chosen incorrect lifestyles they would try to safeguard their mistakes through various behaviour strategies. Stepansky (1983), in a review of Adler's work, posited that the critical aspect of psychological defence strategies was the protection of the self from esteem losses that might attend failures to face and overcome the challenges of life. Stepansky argued that in Adler's view, the self was the centre of, and the prime mover within the psyche.

Ansbacher and Ansbacher (1967) identified three types of safeguarding strategies: *excuses*, *aggression*, and *distancing*. They interpreted Adler's safeguarding strategies in the following manner. Excuse making is a safeguarding strategy that individuals use as a short-term measure to rationalise their own inadequacies. As a strategy, aggression involves individuals depreciating and accusing others as well as self-accusing. The third strategy of distancing or withdrawing allows individuals to escape from threatening situations by creating psychological distance. The strategy of psychological distancing involves individuals creating obstacles through the reporting of symptoms designed to prevent or hinder success. Ansbacher and Ansbacher argued that Adler viewed distancing as a positive strategy because individuals could maintain their involvement in tasks although the outcomes of the tasks

were uncertain. Ansbacher and Ansbacher noted, nonetheless, that Adler argued that with the passage of time, continual use of distancing as a strategy would lead individuals to adopt neurotic lifestyles.

The concepts of Adler played a major role in influencing contemporary thinking about the importance of the self, the development of identity, and the use of coping behaviours to protect the self. The legacy of Adler's views of symptoms as having excuse making functions is apparent in the work of later writers. For example, Horney (1950) also saw self-esteem maintenance as a prime aim of neurotic symptoms. In her view, neurotic individuals hinged their self-esteem on their ability to maintain overly idealised self-images of themselves. Higgins (1990), in a review of symptom-based performance impediments, maintained that attribution theorists unconsciously disassociated themselves from Adler's ideas of esteem-saving attributions. Higgins cited several examples of research that described self-esteem protection behaviours but did not refer to the theoretical work of Adler. Furthermore, Higgins noted that in his personal correspondence with E. E. Jones regarding the historical roots of self-handicapping, Jones admitted that the notions of Adler did unwittingly play a part in his development of the self-handicapping concept.

Snyder and Smith's Formulation for the Uncertainty Set for Self-handicapping

Snyder and Smith's (1982) proposal widened the self-handicapping concept in a number of ways. They outlined three ways in which people strategically use self-handicaps. They proposed that people use self-handicaps to assist them in controlling attributions (made by themselves and others) concerning performances to discount the self-relevant implications of poor performances and

augment the self-relevant implications of successes. Also, people use self-handicaps to avoid self-esteem threatening situations entirely. Finally, people use self-handicaps to maintain the existing environmental conditions that maximise positive self-relevant feedback and minimise negative self-relevant feedback.

Moreover, in line with Adler's notions, Snyder and Smith (1982) extended the definition of a self-handicap in two ways. They suggested that some handicaps are self-evident (such as ingestion of a drug) but, in some instances, the self-handicap required the self-handicapper's avowal. For example, people would claim that fatigue would impair their performances. Also, they proposed that self-handicaps vary in duration. For example, they suggested that handicaps such as test anxiety might exist a long time before the performance, but other handicaps such as saying one is injured or fatigued might be short-lived and tailor-made for the occasion. Snyder and Smith proposed that people would use claims of a handicap in evaluative situations where eventual success is uncertain even without direct experiences of non-contingent success. So, they widened the antecedent uncertainty set to include performance uncertainty arising out of any number of sources.

The first two benefits of self-handicapping in the Snyder and Smith (1982) formulation parallel those of Jones and Berglas (1978). There is agreement between the two in the attribution benefits of self-handicapping. Snyder and Smith's belief that self-handicaps serve to help people avoid threatening evaluations is similar to Jones and Berglas' contention that self-handicaps thwart meaningful evaluations. The two formulations differ with the addition of the use of strategic internal factors. The dimension of internal factors added the idea that people can use self-handicaps to reduce threats contained in evaluative situations,

or they can also use handicaps to secure environments that afford opportunities to enhance self-esteem.

There is literature that supports the Snyder and Smith (1982) assumption. In particular, three studies (Smith et al., 1982; Smith, Snyder, & Perkins, 1983; Snyder, Smith, Augelli, & Ingram, 1985) that shared a common protocol highlight the connection between failure and the tendency to self-handicap.

Evidence of the Link between Self-handicapping and Non-contingent Failure Feedback

Smith et al. (1982) reported the first evidence that some people use reports of symptoms as a means of self-handicapping without a direct experience of non-contingent success. Drawing on previous evidence that people categorised with various psychological conditions use associated symptoms to secure benefits for themselves, Smith et al. hypothesised that people classified with psychological conditions would be accustomed to using the associated symptoms as self-handicaps. Smith et al. tested this hypothesis by investigating differences between high and low test anxiety groups in the reporting of state anxiety.

Smith et al. (1982) used a similar protocol as that used for the non-contingent success studies. The procedure involved participants completing two parallel tests. The researchers changed test items so that there were no discernable answers, as well as altering the test conditions so that no participant could complete the test. The rationale was that participants would harbour doubts about being successful because they could not complete the test items successfully, could not complete all of the test items in the time, or a combination of both. Between tests, researchers offered participants different information about the

veracity of the dependent variable as a mitigating excuse. In general, the information delineated the dependent variable as either a mitigating excuse, as not a mitigating excuse, or there was no mention of the veracity of the dependent variable as mitigating excuse.

Participants were female undergraduate students who completed the study as part of their university requirements. Participants were preselected based on their test scores on the Sarason Test Anxiety Questionnaire (Sarason, 1972), with *high* and *low* anxiety groups based on the top and bottom quintiles. The researchers told participants that the test was evaluative of intelligence and that they would complete the test in two halves. Some participants were allocated to a non-evaluative control condition. No mention to these participants was made of the evaluative aspects of the test. Participants completed a measure of their state anxiety before the first test and then started the test. The test was a sham with the time set so that no participant completed more than half of the items.

Immediately after the first test, different information about the effects of state anxiety on test performance served to divide the sample into four groups. In the *anxiety inhibits test performance* condition, participants were told that test anxiety was a mitigating excuse for flawed performance. In the *anxiety has no effect on test performance* condition, participants were told that test anxiety was not an excuse for flawed performance. In the *no instructions* condition, participants received no information about test anxiety as a possible excuse. In the *no instructions-non-evaluative* condition, the researchers gave participants in the non-evaluative condition no information about test anxiety as a mitigating excuse.

Smith et al. (1982) hypothesised that participants in the test anxiety effects performance condition and participants in the no instruction condition would report more state anxiety before the first test than participants in the test anxiety has no effect condition and participants in the no instruction-non-evaluative condition. They hypothesised that this pattern would only be evident for participants categorised with high anxiety. Their rationale was that the participants in the high test anxiety group would be familiar with using test anxiety as a mitigating excuse, whereas participants with high test anxiety and who were told anxiety was not a mitigating excuse would not be familiar with using other types of strategies as excuses and would reduce effort as a means of self-handicapping. To test this assertion the authors measured participants' perceived level of effort on the first test. Thus, the design was a 4 (anxiety instructions: anxiety inhibits test performance, anxiety has no effect, no instructions, & non-evaluative control) by 2 (anxiety group: high & low).

After the first test and immediately after the delivery of the test anxiety effects manipulation, all participants completed a retrospective measure of state anxiety for the first part of the test. The researchers then terminated the study. To test the effectiveness of the experimental manipulation, the authors predicted that participants categorised as high in test anxiety would be more sensitive to evaluative threat than their counterparts categorised with low test anxiety. There was a large effect size ($f = 0.26$) across test anxiety groups. Participants categorised as high in test anxiety and in the evaluative conditions reported significantly more state anxiety before the first test than their counterparts in the non-evaluative condition and participants categorised as low test anxious in all evaluative conditions.

Tests of the hypotheses (Smith et al., 1982) showed mixed results. For the low test anxiety group there was a medium effect ($f = .24$) across test anxiety effects performance conditions, but there were no significant differences. For the high test anxiety group, there was a large effect size ($f = .80$) across test anxiety effects performance conditions. Participants in the no instruction condition reported more test anxiety ($M = 31.64$) than participants in all other conditions (test anxiety effects performance, $M = 29.79$; test anxiety has no effect, $M = 27.97$; no instructions-non-evaluative $M = 23.50$). Nonetheless, comparisons between the three test anxiety effects conditions revealed only a significant difference between participants in the no instruction condition and the test anxiety has no effect on performance condition. The predicted difference between anxiety effects performance and the no instruction conditions was not reliable. The direction of the results implied that participants self-handicapped when they believed that test anxiety could serve as an excuse compared to participants who believed that test anxiety was not an excuse.

Smith et al. (1982) hypothesised that by removing test anxiety as a possible excuse for flawed performance, reports of expended effort on the first test should parallel the hypothesis for state anxiety. For the high test anxiety group, there was a large effect size ($f = 0.78$) across test anxiety conditions. Specifically, participants in the test anxiety has no effect condition, reported significantly less effort ($M = 27.97$) than participants in the no instructions ($M = 31.64$) and participants in the test anxiety hurts test performance ($M = 29.79$) conditions. The results for the low test anxiety group returned a small effect size ($f = 0.09$) with reports of expended effort not reliably differing because of test anxiety instructions.

Smith et al. (1982) concluded that their results showed that people categorised as high in trait anxiety used the symptom associated with test anxiety (i.e., state anxiety) as a self-handicapping strategy. A caveat they applied to their conclusion was that people would only self-handicap in this manner when the symptom was not publicly acknowledged as a mitigating excuse. Their suggested reason was that self-avowals needed a level of deception to prevent awareness of others of the nature and purpose of the handicap. Finally, Smith et al. concluded that people who were familiar with using self-reports as mitigating excuses (i.e., those with high test anxiety) were not familiar with using other “symptoms” and consequently had to withdraw effort as a self-handicap.

There are a number of implications from the Smith et al. (1982) study. In general, the results of the study suggest that some people are aware that they can use symptoms associated with their condition as mitigating excuses for flawed performance. The results are supportive that failure (or the implication) is an antecedent to performance uncertainty. The inclusion of the antecedent of failure broadens the nature of self-handicapping, to include both a motive to self-handicap because of a desire to maintain a successful image and a desire to protect an image in the advent of failure. Nonetheless, the Smith et al. study left open some issues related to methodological problems.

The measure of the dependent variables was retrospective. Researchers asked participants to assess, retrospectively, their level of state anxiety and the amount of effort after the first test, but only after, they had learned of the mitigating excuse of state anxiety. It is possible that participants used the retrospective measure of state anxiety as a post hoc strategy similar to excuses rather than in a self-handicapping manner. Self-handicaps are proactive strategies rather than

retrospective (Higgins, 1990). Participants might have been responding with excuses for previous failure rather than providing excuses for possible future failure.

Smith et al. (1982) did not assess participants' level of ego-relevancy for the test outcomes. Some participants may have chosen not to self-handicap because the test outcome held no threat. Finally, an estimation of effect size and power (Cohen, 1988) for the main effects indicated that there were possible Type II errors when the researchers did not reject the null hypothesis for the low anxiety group. Using Cohen's f (1988) as the measure of effect, there was a medium effect between the test anxiety instruction conditions. Estimates of power (.23-.43) indicated that the study possibly had insufficient power to detect significant differences between the test anxiety instruction conditions.

Smith and Snyder with other colleagues (Smith et al., 1983; Snyder et al., 1985) published two more investigations that documented how people diagnosed with varying psychological conditions (i.e., hypochondriasis, social anxiety) would report symptoms associated with their disorders as self-handicaps. Smith et al. (1983) replicated the procedures of Smith et al. (1982), except that they recruited female undergraduates based on previous scores on a measure of hypochondriasis scale of the Minnesota Multiphasic Personality Inventory (MMPI) (McKiney & Hathaway, 1940) and two groups were formed (*high* or *low hypochondriasis*). After completing the first test, participants were divided into groups by different information about the effect of physical health on test performance. In the *physical health has no effect* condition, illnesses were ruled out as mitigating excuses for flawed performance. In the *no information* condition, there was no mention made about illnesses as mitigating excuses. In

the *non-evaluative* group, participants received no information about illnesses as excuses. After the delivery of the health effects instructions, all participants completed two questionnaires about recent and current symptoms. As a measure of recent symptoms, participants completed the female form of the physical health scales of the Cornell Medical Index (CMI) (Brodman, Erdman, Lorge, Gerhenson, & Wolf, 1952) a true-false self-report of physical health complaints. Scores on this measure were the total number of endorsed complaints. Participants also completed a Current-symptoms Checklist (Matthews, Schier, Brunson, & Carducci, 1980). For each of the 14 items on the checklist participants indicated on a 7-point Likert scale the extent to which they had experienced any of the listed symptoms during the previous 24 hours. For example, the measure included items such as headaches, upset stomachs, sweaty hands, and chest pains. The two measures served as the dependent variables. After completing the two measures, the study stopped.

Smith et al. (1983) assumed that participants in the high hypochondriasis group in the no information condition would believe that the reporting of physical illnesses could serve as excuses, and would report greater numbers of illnesses when faced with evaluative threat than their counterparts in the physical health has no effect condition. Using the measure of recent symptoms experienced (CMI), within the hypochondriasis group there was a large effect ($f = 0.55$) between physical health effect conditions. Specifically, participants in the no instruction condition reported significantly more physical illnesses ($M = 24.4$) than participants in physical illness has no effect ($M = 18.1$) and participants in the no evaluative ($M = 19.7$) conditions. Similar analysis for the low hypochondriasis group resulted in a non-significant result. This pattern of

results was repeated for the second dependent variable of intensity of experienced symptoms. For the hypochondriasis group, there was a large effect ($f = 0.50$) between physical health effects conditions. Participants in the physical illness has no effect ($M = 26.6$) and non-evaluative ($M = 30.1$) conditions reported significantly fewer current symptoms than participants in the no-instructions group ($M = 35.1$). For the non-hypochondriasis group there was small to medium effect size ($f = 0.24$) but there were no statistical differences between physical health effect groups.

Snyder et al. (1985) obtained similar results in their investigation of the differences in the reporting of social anxiety as a self-handicap in two groups of male and female undergraduates. Recruitment of participants was based on their scores on the Social Avoidance and Distress Scale (SADS) (Watson & Friend, 1969), a measure of social anxiety. Participants were divided into *high* and *low* social anxiety groups. The group was further divided by different instructions about how social anxiety could serve or not serve as a mitigating excuse. In the *shyness has no effect* condition, participants were told that shyness was not an excuse for flawed performance. In the *no instruction* condition, participants were told nothing about the effect of shyness as a mitigating excuse. Participants in the *non-evaluative* condition received the same instructions as those for the no instructions condition. After the first test and immediately after the shyness effect instructions, all participants completed a modified measure of the Social Avoidance and Distress Scale and the Stanford Shyness Scale (SSS) (Zimbardo, 1977). The modifications to the SADS involved changing the true-false response format to a 4-point Likert scale. The SSS consisted of six self-report items on shyness. These measures served as the dependent variables.

The authors asserted that participants in the high social anxiety group in the shyness has no effect condition and in the non-evaluative condition would report less social anxiety on the two measures of social anxiety than would their counterparts in the no instruction condition. Moreover, this pattern would not be evident in the low social anxiety groups. The variable of gender was also examined thus all analyses were a 2 X 3 X 2 (Level of social anxiety X Experimental conditions X Gender) ANOVA. Results using the data from the SADS, showed a large effect ($f = 0.68$) for the three-way interaction between groups. Individual comparisons for males showed no differences across experimental conditions for participants categorised as low in social anxiety. For males categorised as high in social anxiety, only participants in the no instruction condition reported significantly higher levels of social anxiety ($M = 74.9$) than their counterparts in the shyness has no effect ($M = 61.6$) and the non-evaluative control ($M = 67.1$) conditions. For females, there were no differences for either anxiety group across any experimental condition. A repeat test of the hypotheses using the data from the SSS replicated the findings obtained from the SADS data.

Snyder et al. (1985) interpreted their results, as evidence that males high in social anxiety but females did not self-handicapped by inflating the amount of experienced anxiety. The researchers argued that their findings supported the assumption that people are willing to use their symptoms as a means of self-handicapping subsequent performances when they experienced doubts about successful performance.

There are several implications from both studies (Smith et al., 1983; Snyder et al., 1985). The data from both studies are consistent with the assertion of Snyder and Smith (1982) that some people use self-avowals as a means of self-

handicapping. Moreover, both studies consistently show that some people who experience failure on an evaluative test are willing to self-handicap before subsequent tests. Nevertheless, there are several methodological shortcomings to the studies. Smith et al. (1983) described their measure of self-reports of symptoms as being less extreme than other behaviour such as doctor visits and complaints to physicians. Moreover, they speculated that the level of threat that the protocol represented to those diagnosed with hypochondriasis was also described as less severe than that which they would experience in non-laboratory settings. They cautioned that their results should not be generalised to the assumption that people with hypochondriasis use their symptoms as excuses in a different manner to people without hypochondriasis. So there might not be any differences in the high and low groups that means anything.

Also, not rejecting the null hypothesis for groups diagnosed as low in either study (Smith et al., 1983; Snyder et al., 1985) might reflect Type II errors. For example, in Smith et al. (1983), there was no rejection of the null hypothesis, yet there was a medium effect size. Using an estimate of power (Cohen, 1988) it appears that perhaps there was insufficient level of power (9-20 %) to detect significant differences. Thus, differences in self-handicapping might have been present across the information conditions for the low hypochondriasis group.

Review of the Evidence for the Smith and Snyder Formulation

The review of literature (Smith et al., 1982; Smith et al., 1983; Snyder et al., 1985) supported the assumption that failure is an antecedent condition for self-handicapping. The implication is that when some people experience failure, or suspect that they have failed, they are willing to self-handicap by using self-

avowals as mitigating excuses for flawed performances. In all three studies, difficult test conditions and the lack of performance data on a first test were assumed to have created doubts in participants' perceptions of performance certainty. Nevertheless, there are some caveats.

All three studies dichotomised continuous variables from self-report inventories to separate participants into high and low groups and tested the relevant hypotheses using a between-groups design. For example, Snyder et al. (1982) selected participants based on the top and bottom quintile scores of an anxiety inventory, Smith et al. (1983) used a median split on a measure of hypochondriasis to form high and low hypochondriacal groups, and Snyder et al. (1985) used median splits on a social anxiety inventory. Some authors (e.g., Cohen, 1988) have warned against the dichotomising of continuous variables because of the adverse effects on power and effect size. More recently, Maxwell and Delaney (1993) argued for scepticism for the results of studies using two-way ANOVA with dichotomised variables.

Estimates of power to detect effect sizes in the groups categorised as low in the varying psychological conditions (Smith et al., 1982; Smith et al., 1983) were insufficient, and it is possible that the researchers made Type II errors in accepting the null hypotheses. There is the possibility that participants diagnosed as low in the psychological conditions did show to those classified as high a similar pattern of self-handicapping. The implication is that regardless of level of psychological condition, people use self-protective strategies when the excuses can serve as mitigating circumstances for possible flawed performance

There is agreement that self-handicapping occurs only when there is evaluative threat to an important self-dimension (Snyder, 1990). In all three

studies, there was no measure of ego-relevancy of the test outcome to participants. It is possible that some participants did not self-handicap because the implications of the possible flawed performance lack sufficient importance to warrant self-handicapping. For example, some participants may have experienced uncertainty, but did not self-handicap because the relevancy of their feelings for failing a social anxiety test did not present a sufficient threat to self-esteem.

There are other criticisms of the evidence presented by the investigations of the Snyder and Smith hypothesis. In particular, Berglas had several criticisms of the hypothesis. What follows next is an overview of his criticisms.

Berglas' Critiques of the Smith and Snyder Formulation for Self-Handicapping

Berglas (1985; 1989) argued that the Snyder and Smith (1982) hypothesis, rather than broaden the self-handicapping concept, instead threatened to limit its value. Berglas centred his critiques along two lines of reasoning. The first derived from his interpretations of Adler's writings, and the second related to the counter-attributional consequences of "fending off" dispositional ability attributional consequences by encouraging attributions to other internal characteristics.

Berglas (1985; 1989) argued that the motivation underlying his and Jones' (1978) concept, and Snyder and Smith's (1982) concept were distinct. Berglas (1985) contrasted his view of self-handicapping as being motivated by a desire to preserve a positive but fragile self-concept with Adler's view that neurotic safeguarding strategies are designed to conceal an underlying feeling of inferiority. According to Berglas, Adler viewed the neurotic safeguarding

strategies as covering-up tactics. In the Adler-based formulation (Snyder & Smith, 1982), Berglas argued that the reporting of symptoms was a strategy designed to cover up for a deficit, whereas, in the non-contingency success formulation, individuals used handicaps to protect the loss of valued resources.

There is support for Berglas' assertion (1985). Higgins (1990) in a review argued that Berglas had correctly identified that feelings of inferiority were a driving force behind Adler's concepts of safeguarding strategies. Nonetheless, he cautioned that the definition placed on inferiority by Berglas was too narrow. Higgins reasoned that Adler saw feelings of inferiority as being a universal human experience, and as such, to be human means to possess a feeling of inferiority. The primary compensation for people's inevitable feelings of inferiority was the creation of fictive goals (superiority). Higgins reasoned that Adler's system of fictive life goals for people provides them with a basis for self-esteem that exists apart from any current life difficulties. So long as people can sustain the illusion of making progress towards achieving superiority, there is a reason to regard safeguarding strategies as defensive in the sense of preventing the loss of a valued resource. Also, Higgins reasoned that self-defence strategies such as self-avowals of impediments helps people maintain participation in activities under difficult circumstances.

Berglas (1989) used an analysis of the research paradigm of Smith et al. (1982) to substantiate his assertion that symptom-based self-reports implicated a different self-protective process from that involved in his and Jones' studies. In the analysis, Berglas focused on contrasting the experiences of participants before they had the opportunity to use a self-handicap. He argued that in the context of the non-contingent success studies, participants had positive if yet

false images to protect, but participants exposed to the Smith et al. protocol had a very different self-protective motive. Berglas argued that participants in the Snyder and Smith study were attempting to excuse a previous failure rather than an upcoming failure because there was no parallel test. This is a point well taken but the subsequent studies by Smith and his colleagues addressed this shortcoming by including the expected parallel test. Moreover, Higgins (1990) noted that it was unwise of Berglas to assume that participants in the failure-based studies (Smith et al., 1982; Smith et al., 1983; Snyder et al., 1985) did not have positive images to protect simply because the experimental protocol did not provide one.

Higgins (1990) placed the motivational counter arguments (Berglas, 1985) of the symptom-based formulation (Smith et al., 1982) in context with his observation that Jones and Berglas (1978) did emphasise in their first paper that some events in individuals' histories do create fragile and ambiguous, but not wholly negative, self-concepts. Moreover, he argued that Jones and Berglas indicated in their paper that people who use self-handicaps may also have an abnormal investment in their self-worth and may suffer from what Higgins called a competence complex. Higgins reasoned that Jones and Berglas recognised that people who use self-handicaps may have suspicions that they are incompetent and that for these people the suspected truth about their true selves is too horrible to risk in an evaluative situation.

The review of Higgins' (1990) observations of the Jones and Berglas (1978) protocol illustrated the point that in their initial paper, Jones and Berglas appeared to imply the possibility that positive yet tenuous self-concepts are not a prerequisite to self-handicapping. They commented in their paper that individuals

who use self-handicaps do so to sometimes avoid confirming suspected unpleasant truths about themselves as well as to preserve the foundations of positive regard. Moreover, to sharpen the boundaries of what constitutes self-handicapping, Jones and Berglas did acknowledge the sick role behaviour as a type of self-handicapping in their examples but limited the role of symptoms to temporary and controllable strategies. The logic of the temporal limitation is evident in the second of Berglas' counter arguments to the Smith et al. formulation.

The second issue (Berglas, 1985) centred on the dispositional attributions of individuals who use self-handicaps. According to Berglas, should individuals continue to use self-handicaps past the point of the handicap being transient and controllable, the handicap would assume the diagnosticity of a disposition (Berglas' term). At this point, the strategists' competence images would have to be judged anew. For example, in the situation where individuals' poor work performances are consistently preceded by evidence of alcohol intoxication, others will attribute the performances of those individuals to having drinking problems (dispositional attribution). Furthermore, Berglas argued that others viewing the drinking behaviour of such individuals would then use the dispositional attribution to predict subsequent behaviour. Berglas argued that individuals who used a persistent single strategy symptom as a handicap would run the risk of inviting others to define them in terms of their strategy (i.e., the risk of being labelled as alcoholics). The attachment of labels would then possibly influence all parts of an individual's life. Berglas maintained that individuals would not want the risk of all dimensions of their lives linked with negative labels.

Berglas (1985) maintained that on this basis of attributional consequences, the self-handicap must be akin to the weather that is, external to the self and something that will, by definition, be limited in duration. Berglas posited that Snyder and Smith's (1982) proposal that symptoms could be self-handicaps made the self-handicap internal and implied that they were likely to persist over time, thus leading to supplementary dispositional attributions. For example, individuals would label themselves as a hypochondriac or socially phobic. At this point, Berglas argued that the self-handicap did not fit the "quit while you are ahead" label, but rather one of "cutting one's losses".

Regardless of the criticisms for each hypotheses and the associated protocols used to test the assumptions inherent in each, self-handicapping is a real phenomenon. The review of literature associated with the non-contingent success formulation (Berglas & Jones, 1978; Higgins & Harris, 1988; Kolditz & Arkin, 1982) showed that individuals who experienced performance uncertainty because of a history of non-contingent success self-handicapped by manipulating behaviour (e.g., by drinking alcohol) to make good performances less likely. Literature specific to the failure hypothesis showed that individuals who experience uncertainty about successful performance because of prior failure self-handicapped by citing symptoms or impediments (Smith et al., 1982; Smith et al., 1983; Snyder et al., 1985).

The implication of the aforementioned discussion is that the manifestation of self-handicapping differs because of the type of threat experienced by people. Thompson (1999) argued that the differences represented in the two formulations are more apparent than real. He argued that the failure hypothesis (Snyder & Smith, 1982) stresses future outcome certainty and ego-threat, whereas the non-

contingent success hypothesis (Berglas & Jones, 1978) stresses the experimental manipulation of uncertain self-images through deceptive non-contingent success performance data. Nonetheless, this argument potentially undervalues the different effects that the two types of non-contingent feedback pose to people. Thompson (1999) acknowledged that the threat posed by failure is more damning than the threat posed by unexplained success. Failure confirms a flawed self, whereas unexplained success does not. Failure is the more adverse outcome of attempts at achievement tasks, and most people enact self-defensive behaviours to avoid failure. The protocols used in studies to test the two hypotheses operationalised evaluative threat in different terms. Evaluative threat that stems from success may manifest differing uncertainty concerns about performance than does evaluative threat stemming from failure. Non-contingent success challenges the stability of self-perceptions, but non-contingent failure challenges feelings of self-image. Non-contingent success creates the burden of being a success, whereas failure threatens self-image causing individuals to doubt their ability to perform efficaciously. If differing reinforcement histories create differing concerns about performance, then individuals might respond to differing sources of threat with varying self-handicapping strategies.

Arkin, Oleson, Shaver, and Schneider (1998) provided a further clarification of the different manifestations of self-handicapping. They speculated that differing forms of self-handicapping are associated with differing evaluative threats. They suggested that people would use different forms of self-handicapping depending upon the strength of performance uncertainty. Different antecedent conditions might alter the nature of the threat of performance uncertainty, and consequently, people might respond with differing forms of

handicaps. Alternatively, in some circumstances individuals might choose not to use a particular type of self-handicap because the situation does not warrant its use. Arkin et al. argued that when feelings of performance uncertainty exist in a short time-frame, such as singular tests of intelligence or physical skill, individuals might use what they termed the *garden variety* self-handicap. This type of self-handicap would likely include the self-report style of handicap such as anxiety or injury. The ramifications and potential consequences of people using such garden variety type handicaps would be less than the use of an acquired impediment such as alcohol ingestion because the failure was unexpected or expected only to last a short time. This type of self-handicapping behaviour seems to mirror Adler's notion of psychological space, where individuals enter into a situation with some attached impediment (i.e., the self-avowal) to allow them to continue.

Contrasting this transitory, time-limited aspect is the situation where people have experienced feelings of doubt regarding a self-concept for a longer period. Threats that cause performance uncertainty in this more chronic condition may be the case when individuals are confused because of an inability to discern whether unconditional love and caring or adequate performance is the basis for positive reinforcement. As the feelings of performance uncertainty might be more powerful because of the temporal duration, Arkin et al. (1998) argued that the *acquired external handicap* might offer individuals greater psychological protection. Exemplifying this utility of self-handicapping, alcoholics who continually use alcohol as a self-handicap are able to gain the reputation of an alcoholic. In adopting this behaviour, individuals are able to protect their

competency image in all spheres of their lives, as alcohol becomes a constant handicap.

To this point, the discussion has provided evidence to support the two hypotheses for the antecedent conditions for self-handicapping. It is clear that people consciously decide when to use a self-handicap. They may choose what type of handicap is salient for the situation. Moreover, there seems to be differences in the pattern of self-handicapping dependant upon the type of threat experienced by people. The evidence thus far has been limited to how people respond to evaluative threat to self-concepts associated with the academic domain. There is little evidence of self-handicapping being associated with other achievement contexts in the studies discussed hitherto.

Initially, Jones and Berglas (1978) claimed that the sports world was full of people who self-handicap, and in most mainstream literature the sports world is used as an illustrative example. Yet, there are a limited number of investigations of self-handicapping associated with the physical domain (Carron, Prapavessis, & Grove, 1994; Hausenblas & Carron, 1996; Prapavessis & Grove, 1998; Rhodewalt, Saltzman, & Wittmer, 1984; Ryska et al., 1999; Ryska, Yin, & Cooley, 1998). These investigations are limited because they have not experimentally manipulated performance certainty. To date, there has been no attempt at testing the assumptions for self-handicapping under experimental conditions for the physical sport domain. What follows next is a review of the protocol used in the aforementioned investigations. I have not attempted to be exhaustively comprehensive in my review. Rather I have provided a critique of the protocol to document some shortcomings, and hence offer an argument for the protocol used in the studies in this thesis.

Protocols used to Investigate the use of Self-handicapping within the Physical Domain

Before proceeding, I need to make a point of clarification of the terminology used in this thesis. I adopted the definitions of self-concept and self-esteem that described both in a hierarchical and multifaceted manner. Following the model of Shavelson et al. (1976), individuals hold self-concepts at various levels that are associated with specific achievement domains. At the level of academic self-concept, individuals hold self-concepts specific to the domains of intelligence and social intelligence. On the non-academic side, the model indicates that individuals hold self-concepts that are specific to the physical domain, and that individuals hold specific self-concepts regarding their abilities related to achievement contexts where movement is the primary basis. Within the literature there are differing terms to describe the self-concepts held for the physical domain. The terms physical skill, sport domain, and physical domain interchangeably used in the literature when describing the physical achievement domain or self-concepts related to that domain. For the purpose of clarification, I have adopted the term *physical domain* in this thesis to identify self-concepts held for abilities related to sport.

A commonality within the reviewed literature was the manipulation of participants' perceptions of performance certainty to allow some conclusion to be made for the connection between self-handicapping and type of evaluative threat (i.e., non-contingent success). The literature associated with the physical domain and self-handicapping has not used experimental manipulations of performance certainty. The studies have proceeded on several assumptions. The studies have used the Self-handicapping Scale (Jones & Rhodewalt, 1982) to dichotomise

individuals into either high or low categories of excuse-makers and then report on individual differences in the use of self-handicapping based on these two groups. Also, the studies were non-experimental and assumed that important events caused performance uncertainty. Typically, the measure of self-handicapping occurs before sports events that are rated by participants as important. The assumptions inherent in the protocol used to study self-handicapping in the physical domain are due to the replication of the first study of individual differences in athletes' uses of self-handicapping (Rhodewalt et al., 1984).

Rhodewalt et al. (1984) reported the first study of how athletes differed in their use of self-handicaps. The Rhodewalt et al. protocol differed from previous studies in a number of ways. Rather than examine differences in self-handicapping between high and low groups formed on measures of psychological conditions, the authors used the Self-handicapping Scale (SHS) (Jones & Rhodewalt, 1982) to form two groups. The SHS is a measure designed to identify people who have an increased proclivity to use excuses. Rhodewalt et al. used the SHS to separate athletes into *high (HSH)* and *low (LSH)* trait self-handicapping groups based on a median split of scores on the scale. Also, the protocol was non-experimental in that it contained no experimental manipulation of participants' perceptions of certainty about successful performance. Rather, Rhodewalt et al. proceeded on the assumption that athletes would experience greater doubts about performance certainty for upcoming important sports events than for unimportant events. Finally, the measure of the dependent variable of self-handicapping contained a number of different behaviours such as attendance

at practice sessions, level of effort expended at practice sessions before each event, health, course loads, and physical problems.

Rhodewalt et al. (1984) predicted that before events rated as important, athletes categorised as HSH would decrease practice effort, report an injury, or complain of increased course demands more than athletes categorised as LSH. The pattern of self-handicapping would not be evident between HSH and LSH groups before events rated as low in importance. Rhodewalt et al. speculated that athletes in the HSH group would self-handicap by manipulating behaviours that were acknowledged as reasons for not performing in sport. Athletes completed the SHS (Jones & Rhodewalt, 1982) before the start of a competitive season. Athletes rated the importance of each event on a 5-point scale. Events were divided into two groups (*important* and *unimportant*) with five meetings ranked as low ($M = 2.65$) and five meetings ranked as high ($M = 4.52$). Data from one meet was excluded because not all participants competed in the meet. The dependent measures of self-handicapping were collected before each game or meeting.

The two part Rhodewalt et al. (1984) study involved two samples of athletes. Study 1 contained university swimmers and Study 2 investigated professional golfers. In Study 1 there was a large effect ($f = 0.61$) for event importance. Results of the univariate analysis returned mixed results. For the principle measures of self-handicapping (i.e., practice effort, practice attendance), there were medium to large effect sizes ($f = 0.50$ and $f = 0.39$) respectively for event importance groups. Specifically, both HSH and LSH groups attended more practice sessions and put forth more effort before important events. Planned comparisons showed that athletes in the LSH group increased their practice

efforts and attended more practice sessions before important competitions than before events of low importance. Nonetheless, athletes in the HSH groups showed no significant differences for either dependent variable between high and low important events. No data for mean and standard deviations scores were published, thus effect sizes cannot be computed. All other measures of self-handicapping returned non-significant results.

Likewise, in Study 2 that investigated the golfers self-handicapping behaviour (Rhodewalt et al., 1984), golfers in the LSH group reported that they spent more time practicing than golfers in the HSH group. Nonetheless, before important events there was no significant difference in the practice effort of golfers in either HSH or LSH groups. Moreover, for important meets there were no differences between HSH and LSH groups in their reporting of other impediments.

Surprisingly, Rhodewalt et al. (1984) interpretation was that the results as confirmed the hypothesis that athletes categorised as HSH self-handicap before important events. They reasoned that athletes categorised as HSH, by not increasing the amount of their practice, had handicapped their performances before important events. Nevertheless, several concerns arise from this reasoning.

Rhodewalt et al. (1984) did not consider that before important events, athletes normally taper their training. Tapering is a process of reducing the level of physical training before events. An alternative explanation for the Rhodewalt et al. findings is that the athletes in the HSH group were tapering. The claim that athletes categorised as LSH increased their workload and therefore did not self-handicap is somewhat confounding. Thompson (1999) described the strategy of

overstriving, whereby individuals who have high hopes of success, but are conflicted by high fears of failure, resolve their ambivalence in achievement contexts by leaving no stone unturned in a desire to minimise the risk of failure. It is possible that athletes in the LSH group were engaging in such a strategy.

Also, Rhodewalt et al. (1984) measured practice effort by having each coach rate their athletes' practice efforts before all meets. The use of "others" to rate effort does not fit the definition of self-handicapping because there is no "self" involved. Self-handicapping is a self-generated strategy. The measuring process was changed for Study 2 (Rhodewalt et al., 1984) by using a self-assessment inventory for practice effort. Nonetheless, assessment of differences in effort intensity before important games between trait self-handicapping groups also showed no significant difference.

The use of effort withdrawal as a self-handicapping strategy may be incongruous with the sport environment. An implication of withdrawing effort is that individuals stop or reduce the amount of effort they apply to a task. In sport, this would translate to not attending practice sessions, not trying, or "tanking". The term tanking is used in sport to identify the efforts of individuals that are questionably poor. The essence of sporting contests is effort, and fellow athletes, coaches, and the public view effort withdrawal as distasteful. For example, athletes accused of tanking in a match are normally subjected to negative press reports. Moreover, the strategy of withdrawing effort during practice would place athletes at cross-purposes. For example, selection onto a team is dependent upon a number of factors, not the least of which is training performance (i.e., effort) before events. As the coach's perception of their athletes' efforts during training may influence team selection (as would the case be for swimmers), athletes who

withdrew effort would have run the risk of not being selected for the team. This behaviour would defeat the purpose of using self-handicapping strategy.

Similarly, for professional golfers whose livelihoods depend on winning, effort withdrawal might be untenable. The intent of using a self-handicap, in terms of the self-avowal, is not to sabotage the performance but to change the circumstances surrounding possible flawed performance. Withdrawal would be more akin to self-sabotage.

The alternative interpretation of the results from Studies 1 and 2 (Rhodewalt et al., 1984) is that the trait measure of self-handicapping (SHS) did not predict the use of self-handicapping strategy. Individuals categorised as HSH should have reported more self-handicapping strategies than individuals categorised as LSH. There are several possible reasons why this did not occur. Rhodewalt et al. (1984) presumed that events rated high in importance would cause participants more performance uncertainty than events rated as low in importance. This assumption was never tested. Thus, the data may or may not reflect how athletes differ in the reporting of self-handicaps before important and unimportant events. Also, there is some doubt regarding the validity of the SHS.

Initially, Rhodewalt (1990) reported that the construction of the SHS was an attempt by himself and Jones to develop a face valid measure of the proclivity to use self-handicaps in the academic domain. Rhodewalt admitted that neither Jones nor himself were psychometrically adept at developing instruments. The inventory contains a number of statements that describe various behaviours associated with excuse-making. Rhodewalt reported that the SHS had acceptable reliability and validity data. For example, it was reported that the SHS had acceptable internal consistency ($\alpha = .79$), stability (test-retest reliability at one

month, $r(90) = .74$), and that on several samples the measure had shown good discriminate and convergent validity. Nevertheless, there is literature that is critical of the SHS.

Strube (1986) criticised the original scale and recommended a revised 10-item scale that he reported as being psychometrically sound. Revision of the SHS occurred when Rhodewalt reported a modified 14-item SHS that contained two subscales. These subscales were labelled *excuse-making* and *effort-expended*. Rhodewalt reported that the excuse-making subscale assessed the tendency to make excuses before events and the effort-expended subscale tapped into the willingness to withhold effort in achievement situations. There was no published reliability or validity information for the modified scale.

Subsequent studies in the physical domain (Carron et al., 1994; Hausenblas & Carron, 1996; Prapavessis & Grove, 1998; Ryska et al., 1999; Ryska et al., 1998) have used both the modified and original version of the SHS (Jones & Rhodewalt, 1982) to examine individual differences in athletes' use of self-handicapping. This body of literature reports problems with the internal consistency of the SHS subscales. Hausenblas and Carron (1996) reported that the internal consistency of the excuse-making subscale was only acceptable ($\alpha = .70$) and low and unacceptable ($\alpha = .42$) for the effort-expended subscale. Ryska et al. (1999) reported that the excuse-making subscale had good internal consistency ($\alpha = .72$) but the effort-expended subscale had modest internal consistency ($\alpha = .56$). Prapavessis and Grove (1998) reported that the excuse-making subscale had good internal consistency ($\alpha = .72$) but the effort-expended subscale had low internal consistency ($\alpha = .58$). Martin and Brawley (1999) reported the most compelling evidence regarding the reliability of the SHS.

Martin and Brawley (1999) argued that the mixture of results evident in self-handicapping research for the physical domain was not surprising considering the nature of the development of the SHS (Jones & Rhodewalt, 1982). They argued several reasons why the SHS was not a reliable measure for the physical domain. One argument proposed was that the SHS was a scale designed for the academic domain and was not suitable for the physical domain. They highlighted that the items on the SHS scale reflected self-handicapping strategies associated more with the academic domain than the physical domain. For example, one item referred to the strategy of procrastination, which is a frequently used self-handicap in the academic domain but not so in the physical domain. Also, they reported that the wording of items was also at odds with the physical domain. For example, they argued that item 6 taps the feelings of individuals regarding not being too intensely involved in competitive situations, which would not be applicable to competitive athletes. Thus, Martin and Brawley argued that athletes might respond to the SHS items as they are cooperating in a study, but their response will vary widely because of the mixture of relevant and non-applicable items on the scale. Finally, there has been no validation of the factor structure of the SHS for different populations.

Martin and Brawley (1999) used a confirmatory factor analysis technique across three samples of athletes to test their criticisms of the SHS (Jones & Rhodewalt, 1982). The authors reported that across the three samples, the measures of internal consistency for the subscale of excuse-making were only "just" acceptable ($\alpha = .68-.70$), but for the effort-expended subscale, measures of internal consistency were poor ($\alpha = .23-.49$). Moreover, they reported the corrected item-total correlations for the excuse-making subscale were low to

moderate (0.14 to 0.53) but poor for the effort-expended subscale (0.05 to 0.37). The results of the confirmatory factor analysis for the two-factor model did not reliably produce a good fit for athletes. Factor loadings for the items on the effort-expended subscale were below 0.40. Martin and Brawley recommended that the SHS and its subscales not be used for the physical domain because of the low reliability.

In sum, there is strong evidence to suggest that the SHS is not a valid measure for the physical domain. Despite this possible shortcoming, there is literature that describes the differences in self-handicapping between trait self-handicapping groups. Non-experimental design studies provide the majority of the evidence. The studies have followed a protocol based on the Carron et al. (1994) study of the relationship between self-handicapping and group cohesion. They reported several modifications to the Rhodewalt et al. protocol. Following self-handicapping theory, the authors argued that self-handicaps would only be associated with important athletic events. Hence, they excluded data from participants who did not rate events as important. Also, within self-handicapping theory is the proposition that self-handicaps are internally generated rather than external. They argued that to return the "self" to self-handicapping, participants should report their own handicaps, which was in line with Jones and Berglas' (1978) original intention of people finding or creating impediments to their performance. Moreover, the measure of self-handicapping included a participant report of the amount of disruption that each impediment would cause to an upcoming performance. Subsequent studies have since followed this protocol.

No study gives evidence for the relationship between self-handicapping and either of the two hypotheses for the antecedent conditions. Thus, the relationship

between the evaluative circumstances and self-handicapping is unknown. The studies do describe individual differences in the use of self-handicapping based on the high and low trait self-handicapping groups. For example, Carron et al. (1994) hypothesised that group cohesion and its related sub factors would moderate the use of self-handicapping. The researchers reported that the subscale of excuse-making and perception of the group's task cohesiveness were associated with performance disruption. Specifically, participants categorised as high trait excuse-makers and who perceived their team to be low in social cohesion reported greater disruptions to their preparation for important events. Similarly, later research described the relationship between a number of individual difference variables and the trait of excuse-making. For example, there is research that describes how variables such as group cohesion (Hausenblas & Carron, 1996), achievement goal orientation (Ryska et al., 1998), anxiety (Ryska et al., 1999) and self-esteem (Prapavessis & Grove, 1998) interact with trait excuse-making to influence the tendency to self-handicap.

In sum, the investigation of individual differences in self-handicapping for the physical domain has several shortcomings related to methodological concerns. There is concern that the SHS (Jones & Rhodewalt, 1982) is not a suitable instrument for the physical domain. Studies subsequent to the Rhodewalt et al. (1984) study have proceeded on the assumption that the SHS reliably measures the trait of self-handicapping. If the SHS has low reliability for the physical domain, this raises questions regarding the outcomes and conclusions of the studies. The evidence from the literature associated with the physical domain does indicate that people involved in sports contests are willing to use self-avowals as a means of self-handicapping. Moreover, several individual

difference variables have the potential to cause a difference in self-handicapping. Nonetheless, several aspects of self-handicapping behaviour are unknown for the physical domain. What is not clear is the relationship between the antecedents associated with performance uncertainty and self-handicapping. For example, it is unclear if a previous failure on a test of physical skill is associated with the use of self-handicapping. Moreover, there is scant research pertaining to young people. Unless the antecedent conditions for performance uncertainty can be established for the use of self-handicapping in the physical domain, the applicability of the assumptions for individual differences in the use of self-handicapping cannot be known with certainty. To investigate these questions required the development of a protocol that parallels the academic domain investigations of self-handicapping.

The Experimental Protocol for this Thesis

Common to both formulations of self-handicapping is the assumption that individuals are uncertain of their ability to demonstrate success on an evaluative test. As for academic domains, there is also present the prospect of evaluative threat for participants in physical domain. Also, it appears that the antecedents for evaluative threat are similar in both the academic and the physical domains. For example, Martens, Vealy, and Burton (1990) proposed a model whereby the causes of threat for the physical domain are the antecedents of event importance and uncertainty about performance. Moreover, they argued that when both antecedents are present then perceptions of threat are maximised. Thus, test protocols specific to academic domains should have similar effects for the physical domain. Common to experimental protocols is the assumption that poor or unexpected performance scores create feelings of performance uncertainty in

participants. The operational definition of uncertainty for this thesis is based on performance criteria. Performance criteria that enabled the identification of individuals who were uncertain involved non-contingent performance data following an evaluative test of physical ability, together with an opportunity to use a mitigating excuse for possible failure on a subsequent test.

All too frequently, performance feedback experiments have relied on illusionary performance scores as a means of manipulating participants' perceptions of performing successfully on subsequent tests (Smith et al., 1983). Varieties of deceptive feedback manipulations have been associated with a willingness to use mitigating excuses, which allows individuals to explain their poor performances to non-ability factors (Baumeister & Tice, 1985; Craske, 1988; McFarlin & Blascovich, 1981; Rhodewalt & Davison, 1986).

The self-handicapping protocol can be abbreviated as A*B. Set A is the initial test and where performance scores are given to indicate participants' failures or successes. Set B is the subsequent parallel test. The asterisk denotes the availability of a face-saving excuse or behaviour immediately before Set B, which prospectively allows participants to use self-handicaps to explain possible poor performances without implicating ability. Differences in self-handicapping strategy are then assessed between participants. The emphasis of the protocol is on the use of deceptive performance scores on Set A to create doubt in participants' perceptions of performing successfully on subsequent tests.

As noted in the literature there is a number of problems associated with false performance scores, not the least of which is the effect of participants' suspicions and the resultant risk to external validity. Moreover, there is the question as to whether the manipulation influences individuals who are willing to use self-

handicaps. Two modifications to the protocol have been suggested as a means to address these problems.

To address concerns regarding the threat posed by the use of false performance scores to external validity, some researchers (McFarlin & Blascovich, 1984; Thompson, 1993) have suggested an alternative to “heavy deception”. They suggested that threats to external validity exist because a modified test is used as the evaluative tool and hence the performance criteria are usually unknown to participants. Moreover, the performance criterion normally indicates performance at either end of the spectrum. They suggested that performance should be operationalised in such a way as to minimise deception. They advocated the use of normative data associated with the sham test to allow researchers to manipulate participants’ perceptions of their performances in such a way as to enable feedback that would appear to participants to be veridical and creditable.

There are several examples (Higgins and Harris, 1988; Thompson 1999) of research protocol for pilot testing sham tests and the subsequent collection of performance data to operationalise success and failure feedback. For example, Thompson indicated to participants that they had failed by giving them a score that corresponded to the 25th percentile of the piloted performance data. Higgins and Harris used similar procedures. Thompson claimed that there was a minimisation of the threat to external validity because the test was near identical to standard tests, the data that indicated failure was not at the far end of the extreme end of the spectrum, and the percentiles reflected true performance scores for the test. Given the aforementioned discussion it was decided that the studies in this thesis would follow a similar procedure.

The procedure used in this study was a modification of the protocol used by Craske (1988) and subsequently Thompson (1993). Within the A*B manipulation, Set A provided an initial baseline performance history. Performance certainty was manipulated by means of deceptive performance scores that indicated success or failure. Between each set and after the manipulation, participants were offered a chance to give face-saving excuses before Set B. Participants exposed to the manipulation after completing Set A would have a high degree of uncertainty about performing successfully in Set B. Consequently, these participants would be most likely to use self-handicaps to externalise the reasons for flawed performance. On the other hand, participants not exposed to the manipulation (control) would have no reason to doubt their capacity to perform successfully as the evaluative threat would be minimised without performance data. Therefore, they would have no reason to use a self-handicap to protect against the implications of possible failure on Set B.

All investigations that have experimentally manipulated performance certainty have included an assessment of the effectiveness of the manipulation. Nonetheless, the measures and operational definitions have varied. The protocol for the studies in this thesis has incorporated some of the original operational definition of performance certainty. Berglas and Jones (1978) used a single-item rating whereby participants rated their confidence at being successful on each test item as a means of assessing the level of performance certainty. The intent of the performance criteria in the protocol for this thesis was to manipulate participants' perceptions of confidence in achieving successful outcomes on the test of ability. The rationale is as follows: as the sham test is similar to the commonly encountered actual test, participants should report having high levels

of confidence at being successful on the first test. After the delivery of the performance feedback manipulation, participants should express having lower confidence levels for the second test for two reasons. First, if they are successful on the sham test but not told why then they should experience doubt about replicating the successful performance. Second, if they are unsuccessful and have no information about the cause of the flawed performance, their confidence at succeeding on the second test should also be lower than their scores for the first test.

The protocol involved only assessing the dependent variable after the first test and then comparing the use of self-handicapping to a control group. Gay (1996) defined this design as a post-test only control group design. The rationale for such a design was premised on the needs argued by Gay. First, as the study involved manipulation of individuals' perceptions of performance certainty through deception, the timeline for the study needed to be short to minimise any adverse impact of the deception process. Second, assessment of initial knowledge of the dependent variable (self-handicapping) was not essential for the outcomes of the study, as the purpose of the study was to measure the effect of different feedback contingencies as the antecedent conditions for the use of self-handicapping strategy. Finally, a pre-test of self-handicapping strategy might have given a false indication regarding the effect of reinforcement histories on the use of self-handicapping.

Gay (1996) argued that to overcome the limitations of a post control only design, the protocol should include random sampling and a control group to control threats to validity. The use of a random stratified sampling process and a control group in the studies in this thesis served to control for all sources of

internal validity except mortality. As the length of the interaction with students was held at two weeks, with the actual manipulation and data collection occurring in one testing session, mortality was limited as a potential threat.

The operational definition of performance uncertainty was seen as appropriate in terms of previous studies of self-handicapping. Previous tests of self-handicapping theory have also used sham tests to manipulate performance certainty. To replicate these previous protocols for this thesis, it was necessary to identify a frequently used physical skill test to ensure that the evaluative threat was specific and relevant to the domain. To control threats to external validity of the sham test, participants needed to view the sham test as a reliable and valid test for the domain. What follows next is a report of a pilot study designed to identify a suitable physical skill test and the development of normative data for the sham test of physical ability that served to manipulate participants' perceptions of performance certainty.

CHAPTER 3

Study 1 Pilot Study

The experimental protocol for studies in this thesis was similar to those reported in the literature for examining self-handicapping in response to evaluative threat associated with the academic domain (Berglas & Jones, 1978; Smith et al., 1982). The decision to follow previous protocols was predicated on a number of issues. First, the overarching aim of the studies in this thesis was to investigate how young people responded to evaluative threat that was specific to self-concepts held for the physical domain. Second, a protocol that incorporated a manipulation of performance certainty would allow the relationship between different antecedents to performance certainty and self-handicapping to be known with greater certainty for the physical domain. Third, results could be compared to previous studies from other achievement domains.

Previous protocols involving deception have two common elements. First, the protocol uses a modified bona fide test as the evaluative tool. For example, Berglas and Jones (1978) altered the solvability of test items on a bona fide intelligence test. This strategy ensures that the test has a degree of face validity because the sham test has all the hallmarks of a bona fide test, and participants are familiar with the test procedures. Modification of the test items normally incorporates some mechanism to inhibit performance feedback. The inhibiting of performance feedback then allows the deceptive performance scores to create uncertainty about achieving successful outcomes. Second, deceptive performance scores are given to participants to manipulate their knowledge about the outcome of their efforts on the test.

A criticism of previous protocols is that deceptive performance scores are at the extreme ends of the performance scale. For example, in studies that have employed non-contingent success, the deceptive performance scores have indicated achievement at the highest level. Some researchers (Craske, 1988; Thompson, 1993) have raised the possibility that the inclusion of such procedures poses a threat to external validity. Instead, researchers (Higgins & Harris, 1988; Thompson, 1993) have recommended the collection of performance data associated with the sham test be used to operationalise any feedback contingencies. For example, Higgins and Harris pilot-tested their sham test and operationalised feedback contingencies for a subsequent study based on the percentiles calculated from the performance data associated with the sham test.

Despite the growing body of literature in the physical domain (Carron et al., 1994; Hausenblas & Carron, 1996; Prapavessis & Grove, 1998; Rhodewalt et al., 1984; Ryska et al., 1999; Ryska et al., 1998) that pertains to self-handicapping, there exists to date no published studies that have tested the assumptions for self-handicapping using an experimental manipulation of performance certainty. Thus, there exists no published protocol for the physical domain. To fill this gap, the present study had two aims. The first aim was to identify a suitable test of physical ability that would serve as the base for the sham test. The second was to collect performance data associated with the sham test that would allow the calculation of percentiles. The percentiles would then serve to operationalise the feedback contingencies for the remaining studies in this thesis. As the purpose of the study was exploratory no hypotheses were set.

Part A: Identifying a Suitable Physical Skill Test

Method

Part A of the study consisted of a survey of health and physical education teachers (HPE) in primary and secondary schools in Tasmania. The aim of the study was to identify the most commonly used test of physical ability suitable for young people aged between 10 and 16. Once identified, the most frequently used test would serve as the basis for the sham test.

Participants

Participants were full time health and physical education teachers in public and private primary and secondary schools in Tasmania ($N = 120$). The sample came from schools with at least one full time HPE teacher on staff. The return rate was 66% ($N = 80$). Two surveys were incomplete and discarded, leaving 78 completed surveys included in the data analysis. The sample consisted of 29 high school teachers (male, $n = 22$, female, $n = 7$) and 49 primary school teachers (male, $n = 28$, female $n = 21$).

Instruments

Commonly Used Test of Physical Skill Survey

The Commonly Used Test of Physical Skill Survey (CTPS) was a self-report type inventory designed to measure the frequency of use for a series of physical skill tests (Appendix A). It comprised a list of 19 physical skill tests supplied by the Health and Physical Education Curriculum Officer (HPECO). An open-ended section requested HPE teachers to add any test that they had used that was not listed in the CTPS. HPE teachers rated the tests on two scales. The first scale

measured whether teachers had used each of the tests in the previous 12 month period. HPE teachers responded to a stem “In the past 12 months, which of the following tests have you used in your classroom?” HPE teachers responded by ticking one of two boxes (*Yes* or *No*) for each test.

A second scale assessed the suitability of each test on four criteria. Each of the four items were measured on a 10-point Likert scale with anchors at the extremes: 1 (*not suitable*) and 10 (*highly suitable*). All teachers were requested to complete the scale regardless of whether they had used the test in the previous 12-month period. The four criteria were: (a) ease of use, (b) minimisation of class time, (c) suitability of the test for age groups, and (d) suitability of the test for each gender. The stem “On the following scale, how would you rate the tests” prefixed all items. All scores were summed and averaged to give a single test suitability score (Lawshe, 1975). A high score on the test suitability score indicated a higher rating for suitability.

Procedure

Following granting of ethical approval of the study by the Victoria University of Technology Human Research Ethics Committee, teachers were sent a survey package by mail. The survey package contained an information letter (Appendix B) outlining the purpose of the survey, the CTPS and instructions on how to complete the CTPS. A return postage paid envelope was included in the mail-out.

Statistical Analyses for Part A

To achieve the first aim a multiple dichotomy analysis was conducted to assess differences in teacher’s use of the tests based on percentages. Means,

standard deviations, and confidence intervals for the mean described each test. An analysis of variance (ANOVA), identified differences between tests based on test suitable scores. Post hoc analysis assessed differences between tests. All analyses were calculated using the computer programme, Statistical Package for the Social Sciences.

Part A Results and Discussion

Eliminated from the final analysis were tests not selected ($N = 4$). Teachers reported having used 15 different tests of physical ability over the previous 12-month period.

Tasmanian Health and Physical Education Teacher's Frequency of Use of Physical Skill Tests

The results of the frequency analysis of motor skill tests used in Tasmanian schools are presented in Table 1. Frequency of responses is reported according to type of school (primary or secondary). Statistics under the two teacher-type columns represent the number of respondents who indicated that they had used each test in the previous 12-month period. Totals are shown in an adjacent column. The percentage statistics represent the number of teachers as a percentage of the total sample who indicated that they had used the test in the previous 12-month period.

The results showed that the most frequently used tests across all school groups were broad jump (100%), overarm throw (85.9%), 20 metre shuttle run (79.5%), two handed strike (70.5%), and static balance (74.4%).

Table 1

*Summary of Frequency Analysis of Common Tests of Physical Ability Used in
Tasmanian High and Primary Schools*

Cited Test	<u>HPE Teacher Type</u>			Percentage
	Primary	Secondary	Total	
Two handed strike	49	6	55	70.5
Stationary bounce	49	0	49	62.8
Catch	49	0	49	62.8
Kick	49	0	49	62.8
Overarm throw	49	18	67	85.9
Underarm throw	49	0	49	62.8
Static balance	49	9	58	74.4
Run	49	0	49	62.8
Gallop	49	0	49	62.8
Leap	49	0	49	62.8
20 metre shuttle run	34	28	62	79.5
Flexed arm hang	14	0	14	17.9
Basketball throw	0	29	29	37.2
Broad jump	49	29	78	100
Vertical jump	0	29	29	37.2

Teachers' Perceptions of the Suitability of Five Tests for Assessing Physical Skill Abilities

The five most frequently used tests were assessed to identify differences between tests based the teachers' ratings for each test's overall suitability.

Descriptive statistics for test suitability are presented in Table 2.

Table 2

Summary of Teachers' Perceptions of Suitability of Five Physical Skill Tests

Test	<i>M</i>	<i>SD</i>	<u>95% Confidence Interval</u>	
			Lower	Upper
Broad jump	7.10	1.58	6.75	7.46
Overarm throw	8.33	1.49	8.00	8.67
Shuttle run	7.13	1.68	6.75	7.51
Two handed strike	7.32	1.74	6.92	7.71
Static balance	7.33	1.82	6.35	7.18

HPE teachers rated the overarm throw test as the most suitable followed by the static balance test. The results from the analysis indicated that there was a main effect for test suitability $F(4, 385) = 9.94, p = .0001$, indicating teachers differed in the rating of each test on the suitability score. Follow-up post hoc analysis (Scheffé), identified that teachers' rating of each test's suitability differed significantly. The results indicated that the overarm throw test's suitability differed significantly from all other physical skill tests (Table 3), with the remaining tests not differing significantly from each other.

Table 3

Summary of Post Hoc Analysis of Mean Differences in Teachers' Perceptions of Suitability for Tests of Physical Skill

Test	Test	Mean difference	95% Confidence Interval	
			Lower	Upper
Overarm throwing	Broad jump	1.23*	.40	2.05
	Shuttle run	1.20**	.37	2.03
	Two handed			
	strike	1.01***	.19	1.84
	Static balance	1.57*	.74	2.39

Note. 95% Confidence Interval for Mean Difference.

* $p = .0001$, ** $p = .001$, *** $p = .006$

The main aim of Part A was to identify a suitable test as the base for the sham test. This was achieved in two ways. First, the result of a survey of HPE teachers' use of a range of physical skill tests identified five frequently used tests in both primary and secondary schools. Second, the results for differences in the five tests' suitability ratings showed that teachers rated the overarm throw test higher in suitability than the remaining tests.

In sum, the two results indicated that the overarm throwing test would be the most suitable test to use in the protocol because of its frequency of use and its reported suitability for the identified age groups in the remaining studies.

Part B. Development of the Sham Test of Overarm Throwing

Previous protocols have modified the bona fide test to increase the effectiveness of the experimental manipulation. The modifications made to the

overarm throwing test followed those described for most sham tests. First, the sham test needed to include some type of performance score to indicate a level of outcome and hence ability. Second, the sham test needed to have a degree of novelty so that participants would not become suspicious of their deceptive performance scores. For example, students would be familiar with the overarm throwing test and their previous performances. If they were to be exposed to the original test and given deceptive performance scores that indicated failure, they would suspect the sham. A problem with changing the original test is that this also posed some threat to external validity. For example, if modifications to the test changed the basis of success on the test so that outcomes were based on luck rather than ability, this may also raise participants' suspicions. There were two aims for Part B. The first was to obtain measures of reliability and face validity for the sham test to ensure that the modifications did not pose a threat to external validity. As the proposed populations for the remaining studies in this thesis were, young people aged between 10 and 16, the second aim was to collect performance data associated with the sham test to allow operational definitions for the feedback contingencies to be set for age and gender groups.

Method

Participants

Participants were all enrolled students in secondary schools ($N = 80$) in Tasmania. Age groups selected were 13, 14, 15, and 16, ($M = 14.5$, $SD = 1.12$). There were equal numbers for gender and age groups.

Instrument

Overarm Throwing Test

The basis of the sham test was the overarm throwing test (Ulrich, 1985). The test requires participants to throw a ball using an over the shoulder throwing action. Scoring is based on a pass or fail on four criteria. Two modifications to the overarm throwing test occurred to allow the manipulation of participants' perceptions of performance certainty. The two modifications ensured that the test retained its original form but added a degree of novelty.

Modification 1: Performance Based Scoring System for the Sham Test.

Criterion based scoring is the only scoring procedure for the original test. As performance scores would operationalise success and failure for participants in subsequent investigations, the sham test needed a scoring procedure. To achieve this aim an accuracy component was added to the test. Participants were required to throw a ball and hit a target similar to an archery target. An archery-like target was placed 5 metres from the throwing line. The target had three concentric circles. The inner circle was 20 centimetres in diameter, the next circle was 50 centimetres in diameter, and the outermost circle was 1 metre in diameter. A performance score was calculated on which section of the target that the throws struck: the outer circle scored 1 point, the middle circle scored 5 points, and the inner circle scored 10 points. Summing of all attempts (3) gave participants a performance score.

Modification 2: Reduction of Knowledge of Performance Feedback on the Sham Test.

The protocol for the sham test involved deceptive performance scores on a first test to manipulate performance uncertainty. To achieve this it was necessary to minimise any additional performance feedback in terms of knowledge of results. For example, if participants could observe where each of their attempts hit the target, they would be able to calculate their performance score and thus invalidate any deceptive score. This knowledge would compromise the validity of the deceptive performance score manipulation. To minimise extraneous knowledge of performance, a screen (90 centimetres high) surrounded the target. The screen served to obscure the participant's line of sight of the target. Furthermore, the target was laid flat on the floor. Thus, participants were mostly reliant on the researcher for knowledge of performance.

Assessment of Face Validity of the Sham Test

Gay (1996) specified that for sham tests, face validity is of central importance. Gay defined face validity as agreement by a panel of experts that the instrument appears to measure what it is intended to measure. For this study, the participants were deemed the experts. If the participants agreed that the test measured what it was intended to, then threats to external validity would be minimised. A single item self-report question assessed face validity (Appendix C). Participants rated their perceptions of how congruent their real test outcome scores were to their perceived ability. Participants responded to the stem "Do you think the test score that you have just received is a true reflection of your

physical ability". Responses were measured on a five point Likert-type scale with anchors at 1 (*strongly agree*) and 5 (*strongly disagree*).

Procedure

Victoria University of Technology Human Research Ethics Committee and school principals granted approval for the study. Schools ($N = 10$) were first contacted by phone to seek initial permission to send information about the study. Principals of schools and HPE teachers received written information regarding the study and its objectives following verbal approval (Appendix D). Upon granting of permission by principals, the researcher contacted each head of HPE in the schools by telephone to determine access times. Recruitment of students occurred during their health and physical education classes. An initial meeting with students provided them with an outline of the study's intent and outcomes. Students who indicated an interest in participating took home an information package to their parents or guardians. The information package contained a parental information letter (Appendix E) that outlined the study's aims, and consent forms (Appendix F). Returned signed consent forms ($N = 297$) established a list of potential participants for the study. A stratified random selection of students ensured matched participants in all age groups. Following the procedure outlined by Gay (1996), each consenting student had an allocated number. Students' numbers were placed in age and gender group databases in SPSS (1999). Using the random selection function in SPSS, the required numbers for each age and gender were selected. Identification numbers were then matched with student's names and schools. All students not selected for the study received a letter informing them of the reason for their non-selection and

thanking them for their interest. Students participating in the study received a letter informing of them of the date and time of their participation.

All students completed the study in a private area and in the presence of the researcher at various times depending upon school and sport commitments. No other participants were present during testing. Instructions given to participants informed them of the scoring procedures of the test. To assess the reliability of the test, participants completed the modified overarm throwing test twice. Participants received their true performance score for each test. After completing the two tests, students completed the measure of face validity.

Statistical Analyses for Part B

Means, standard deviations, and confidence intervals for performance are presented in Table 4.

Part B Results and Discussion

Table 4

Summary of Descriptive Statistics for Age Groups' Performance Scores on the Sham Test of Overarm Throwing

Age group	<i>M</i>	<i>SD</i>	<u>95% Confidence Interval</u>	
			Lower	Upper
13	6.1	3.48	4.46	7.73
14	7.15	1.88	6.26	8.03
15	7.95	3.50	6.3	9.5
16	9.65	4.07	7.7	11.5

Percentiles for each age and gender group were calculated from the mean scores. A test-retest correlation coefficient for performance scores was calculated using a test-retest procedure to assess the test's reliability.

Low mean scores for all age groups and an overall low mean score ($M = 7.71$, $SD = 3.5$) indicate that students had difficulty in completing the sham test. One possible explanation is that the modifications may have made the test too difficult. Nevertheless, this was not a major cause of concern as skill development theorists note that children by the age of 10 have mastered the overarm throw (Ulrich, 1985), so the age group used in the present study should have achieved at the highest levels if the test was not modified. A test that was perceived by participants as being too easy may have resulted in an increased threat to external validity, as would a test that was perceived as being too difficult and subsequent deceptive scores regarded with possible suspicion by participants. Young people would expect a test of physical skill to discriminate between skilled and unskilled and a test that was easy might raise participants' suspicions.

Reliability and Validity of Test Scores for the Sham Physical Skill Test

The test-retest method was determined as the most suitable means of establishing reliability. Burns (1995) noted that although there is no standard duration of time that should separate two administrations of a test, acceptable intervals are a minimum of one day and a maximum of one year. Due to the constraints of time and the desire to limit the intrusiveness of the study for the students, the researcher and teachers agreed that 1 day was the most suitable timeframe. Nonetheless, this proved to be unworkable and a number of cases

($n = 65$) were assessed on the same day. The result of the correlation coefficient ($r = .79$) showed that reliability of the test scores was acceptable.

All participants responded to the question about their attitude towards the test outcome as being a valid measure of their overarm throwing ability. There were differences in the attitudes of students towards the accuracy of the sham test outcomes but the majority of participants ($n = 68$) agreed or strongly agreed that the test was a valid measure of their ability.

Percentile Scores for the Sham Test

Percentile scores were calculated for males and females for each age group (Table 5). Participants' highest scores were used to calculate the percentiles. Scores at the 25th, 50th, and 75th percentiles were calculated. Scores equal to the 25th percentile were set as the definition for failure and scores equal to the 75th percentile were set for success. As there was an indication that older groups scored higher on the sham test than low age groups and males scored higher than females in most age categories, percentile scores for each age group and gender were calculated to establish different criteria.

Table 5

Mean and Percentiles for the Sham Test of Overarm Throwing Ability

Age	Group	Mean	Percentiles		
			25 th	50 th	75 th
13	Male	6	2	5	11
	Female	6	5	6	8
14	Male	7	5	7	10
	Female	7	5	8	8
15	Male	9	6	9	10
	Female	7	4	7	10
16	Male	12	9	13	14
	Female	8	4	8	12

Note. All scores rounded.

The main aims of Part B were to assess the modifications made to the overarm throwing test and to collect performance data associated with the sham test. Having participants assess the face validity and completing a reliability analysis for the sham test achieved the first aim. Calculation of percentiles for age and gender groups from participants' performance scores achieved the second aim.

The results for face validity and reliability indicate that the modifications made to the original test did not adversely change its inherent validity and reliability. Students reported general agreement that they thought the test was a true reflection of their throwing ability. Although only a measure of face validity, it is necessary to ensure that the sham test is not seen by participants as bogus to

minimise threats to external validity. The measure of reliability gives evidence that participants' test scores were consistent and that luck is a limited influence on performance outcomes. Similarly, if luck played a large part in the performance outcomes, for example, if the test was too hard, students might suspect that their deceptive scores were a sham. This would also pose a threat to external validity to the protocol.

General Discussion

The use of completely novel tests and illusionary performance data to manipulate participants' perceptions of performance carries threats to external validity. Thompson (1993) recommended the incorporation of two mechanisms in deception studies to lessen the threat to external validity for sham tests. First, the basing of sham tests on bona fide tests. Second, deceptive scores used in any manipulation of participants' perceptions of performance certainty should be associated with performance data gained from the sham test. The present study was a pilot study with two aims. The first was to identify a suitable bona fide test of physical ability to serve as the basis for a sham test. The second, to collect performance data associated with the sham test to allow the operationalisation of the feedback contingencies used in the remaining studies.

First, from a practical standpoint, the results from the frequency analysis indicate that primary and secondary school health and physical education teachers widely use the overarm throwing test. Thus, students should be somewhat familiar with the test and potentially view the sham test as a bona fide test of ability. Second, the same HPE teachers rated the overarm test as being more suitable than four other physical skill tests. The sham test needed to be suitable

on a number of factors to ensure the success of the protocol for the remaining studies. It needed to be time efficient, easy to administer, and suitable for the proposed age range of participants. Overall, the overarm test best fitted these criteria.

The outcomes from Part B give a good indication that the modifications made to the original test did not alter the test so that participants became suspicious. First, most participants strongly agreed or agreed that the test was an accurate indicator of their ability, thus it would appear that participants held the view that the test was a bona fide test. Second, the result of the reliability test provides evidence that there was a degree of consistency inherent in the sham test.

Based on the aforementioned discussion, the use of the sham test of physical ability, and its associated normative data, was advantageous over using completely novel tests, and the sham test and the associated performance data were used for the remaining studies.

CHAPTER 4

Study 2: An Examination of Differences in Self-handicapping Responses of
Young People Exposed to Evaluative Threat

Study 2 investigated how different feedback contingencies caused young people to self-handicap. Specifically, the study examined if different types of non-contingent feedback were associated with two types of self-handicap. Moreover, the study explored if gender caused a differential use of either self-handicap type. The study represented the second and third research aims of this thesis.

The two hypotheses (Jones & Berglas, 1978; Snyder & Smith, 1982) for the antecedent conditions for the performance uncertainty set were outlined in Chapter 2. Each is associated with different types of evaluative threat, and subsequently, different types of self-handicapping responses.

Recapping the discussion in Chapter 2, a body of literature (Berglas & Jones, 1978; Higgins & Harris, 1988; Kolditz & Arkin, 1982) has provided evidence that performance uncertainty caused by non-contingent success is associated with self-handicapping. Alternatively, there was literature (Smith et al., 1982; Smith et al., 1983; Snyder et al., 1985) to support the assumption that performance uncertainty stemming from failure is associated with self-avowals of impediments (self-handicapping).

Common to both sets of evidence was the use of an experimental manipulation to alter participants' perceptions of performance certainty. For example, in tests of the Jones and Berglas (1978) hypothesis, deceptive non-contingent success performance scores formed the manipulation, whereas in tests

of the Snyder and Smith (1982) hypothesis, no feedback or deceptive failure performance scores comprised the manipulation. Unexpected success or unexplained failure causes performance uncertainty and heightened feelings of evaluative threat. Research in domains such as the physical has focused on describing individual differences in the tendency to self-handicap with little attention to the theoretical model of self-handicapping. For example, studies associated with the physical domain have not included an experimental manipulation of performance certainty. This is problematic on two accounts. First, the evidence for relationships is associative rather than causal, which limits the applicability of the findings. Second, the lack of domain-specific testing of the assumptions of self-handicapping leaves several gaps in the knowledge base.

The literature associated with the physical domain indicates that individuals self-handicap when involved in achievement contexts (Carron et al., 1994; Hausenblas & Carron, 1996; Prapavessis & Grove, 1998; Rhodewalt et al., 1984; Ryska et al., 1999; Ryska et al., 1998). Nonetheless, there are a number of shortcomings to this evidence. First, the association between different antecedents to performance uncertainty and self-handicapping is unclear for the physical domain. Second, it is unclear if different antecedents associated with performance uncertainty results in individuals using different types of self-handicapping strategy. Third, there is ambiguity in the evidence as it relates to the association between gender and self-handicapping responses. In general, males but not females are willing to use certain behaviours (withdraw effort) to self-handicap subsequent performances, but only under non-contingent success conditions. Nonetheless, when performance uncertainty was associated with

previous failure, males and females showed no difference in the tendency to self-handicap.

To summarise, one cannot assume that assumptions for the two antecedent sets for performance uncertainty will hold across domains, or hold for young people. The research aims for this investigation were straightforward. First, to test the assumption that young people will respond to evaluative threat by self-handicapping when the threat is to self-concept associated with the physical domain. Second, to test the assumptions inherent in the two hypotheses for the antecedent set for performance uncertainty. Third, to test the assumption that the variable of gender causes a differential use of self-handicapping. The research aims were realised by assessing differences in the use of self-handicapping under differing feedback contingencies. A random selection of young people was exposed to either of two types of evaluative threat with the opportunity to use two types of self-handicaps before a parallel test. A non-evaluative control group was used for comparison purposes.

Hypotheses For Study 2

Several hypotheses were set for this study. The primary aim was to examine differences between individuals in self-handicapping responses when evaluative threat is caused by either prior non-contingent success or prior non-contingent failure. Moreover, as self-handicapping responses differ because of the ego-relevance of the task, only young people who rated the physical domain as having high ego-relevance were included in the population.

The hypotheses were as follows:

1. That individuals who experience performance uncertainty caused by non-contingent success on a first test of physical skill will have significantly fewer attempts at practice (effort withdrawal) before a second test of physical skill than individuals who experience performance uncertainty caused by non-contingent failure or individuals whose physical skill is not being evaluated.

2. That individuals who experience performance uncertainty caused by non-contingent failure on a first test of physical skill will report significantly higher performance disruption before a second test of physical skill than individuals who experience performance uncertainty caused by non-contingent success or individuals whose physical skill is not being evaluated.

Hypotheses 1 and 2 are consistent with previous evidence for self-handicapping responses associated with differing antecedent conditions and self-handicap types. Specifically, individuals who experience evaluative threat caused by non-contingent success adopt behaviours such as effort withdrawal as a strategy to handicap performances. In contrast, individuals who experience evaluative threat caused by failure are willing to use self-reports of performance disruption to handicap subsequent performances.

Associated hypotheses outlined the relationship between gender and self-handicapping. They were as follows:

3. Males in the non-contingent success condition will have significantly fewer practice attempts than females before a second test of physical ability.

4. Males and females in the non-contingent failure condition will not report significantly different levels of performance disruption before a second test of physical ability.

Hypotheses 3 and 4 replicate the known evidence for the relationship between gender and self-handicapping. Specifically, when evaluative threat is associated with non-contingent success, males but not females manipulate their behaviour as a means of self-handicapping. For example, the work of Berglas and Jones (1978) showed that males but not females are willing to use effort withdrawal as a self-handicap. Nonetheless, when evaluative threat is associated with non-contingent failure, the evidence indicates that gender does not cause a differential in the use self-avowals. The literature related to the physical domain consistently reports that males and females equally use self-avowals as handicaps. Gender was included in this study as both types of handicaps were included as dependent variables. The previously mentioned hypotheses, which focused on associations between types of self-handicapping strategies and different antecedent sets for performance uncertainty, were expected to provide a test of the two formulations for performance uncertainty. Confirmation of the use of self-handicapping strategy types with particular evaluative threat was expected to provide insight into how young people respond with self-handicapping strategy when faced with evaluative threat on a task associated with the physical domain. By gathering evidence on how young people respond to evaluative threat and with what types of handicaps, this study would extend what is known about the relationship between differing evaluative threats and self-handicapping.

Method

Participants

Total number of participants was 240 enrolled in secondary schools (males, $n = 170$ and females, $n = 170$). Students' ages ranged from 13 to 16

($M = 14.5$, $SD = 1.1$). They represented some diversity concerning race: white Caucasian ($n = 146$), Australian Aboriginal ($n = 45$) Asian ($n = 37$), and European ($n = 12$).

Instruments

Sham Physical Skill Test

The sham physical skill test for this study was the same as that described in Study 1.

A Measure of Ego-relevance of the Physical Domain

Individuals use self-handicapping strategy when performance outcomes have important implications. Self-handicapping is an ego-relevant strategy insofar as individuals do not use self-handicaps when outcomes have little relevance or are unimportant. Previous protocols have either not measured the relevancy of the outcomes or when they have, there has been an exclusion of participants who rated the domain as low in relevancy (Carron et al., 1994; Hausenblas & Carron, 1996; Ryska et al., 1999). If the same protocol were followed for the studies in this thesis, some participants would have been needlessly exposed to the deceptive protocol. Thus, a single item measure of ego-relevancy was used to limit the sample group (Appendix H). Participants rated the importance of achieving successful outcomes on tests of physical ability. Ratings of importance were on a continuous scale ranging with anchors at 1 (*not at all important*) and 9 (*extremely important*). Participants responded to the stem, “Think about when you are performing tasks that are related to sport and physical activity. How

important are success outcomes to you?" As per the Carron, Prapavessis, and Grove (1994) protocol, high ego-relevance was defined as a score of 7 or higher.

Validation of the Experimental Manipulation

I attempted to manipulate participants' perceptions of performance certainty in this study by using deceptive performance scores so that participants perceived unexplained success or unexplained failure on the first test of ability as a threat to their self-concepts. In response to either feedback contingency on a sham test of ability, participants would doubt the certainty with which they could perform successfully on the subsequent test. Participants in the non-contingent success condition faced evaluative threat because they had unexpectedly succeeded on a new test where there was no explanation of why they had succeeded. The following parallel test created the evaluative threat, as participants had no information as to what behaviour was needed to recreate the previous success. Participants in the non-contingent failure condition faced evaluative threat because they had failed on a test without information as to why they had failed. The following parallel test created evaluative threat to these participants because they had no information about how to avert another flawed performance.

Typically, in most studies, the measure of success of the manipulation has occurred after the feedback contingency. Nonetheless, a single measure gives no indication of changes in perception of control. To obtain a clearer picture of the manipulation's effectiveness in changing participants' perceptions of control, pre-test and post-test measures of control were used (Appendix I). Participants in this study responded to the stem, "With regard to the upcoming test, how confident are you that you have control over the test outcome?" Control was

measured on a continuous scale with anchors at 1 (*no control*) and 5 (*high control*). Participants completed the measure before test 1 and after the feedback contingency information. For participants in the non-evaluative condition, the word *trial* was substituted for *test* to reduce evaluative threat.

Measures of Self-Handicapping Strategies

Two measures of self-handicapping were used in the study.

Self-reports of perceived impediments.

In the first measure, self-handicapping involved participants self-reporting on a checklist any impediments that they had experienced before the testing situation. To avoid exposing the nature of the first dependent variable to participants, the checklist was titled the Situational Impediments Checklist (SIC). The SIC measure (Appendix J) was a list of 25 previously reported impediments to sports performance. Participants completed the checklist before the parallel test. Each impediment had two possible responses (*Yes* or *No*). Participants responded to each impediment by indicating whether they had experienced the impediment in the week before the testing session.

Consistent with previous protocols used in the physical domain (Carron et al., 1994; Hausenblas & Carron, 1996; Ryska et al., 1999; Ryska et al., 1998), participants estimated the percentage of disruption that the combined impediments had on their upcoming performances. Previous protocols have measured performance disruption on continuous scales such as 7-point or 10-point scales. Typically, to obtain a composite score, all scores are summed and then divided by the number of cited impediments. Nonetheless, this procedure may underestimate the strength of the disruption as some listed

impediments might be rated as 1 or 0. Thus, some cited impediments are only potential handicaps. Furthermore, some studies have used a collective tally of cited impediments as a measure of self-handicapping without having participants specify the amount of potential disruption. Several authors (Carron et al.; Hausenblas & Carron) have highlighted that measuring self-handicapping in this manner does not reflect the theoretical definition of self-handicapping. For example, a participant could cite an impediment but attach no future performance detriment. Thus, a combined total of cited impediments might over-inflate the measure of self-handicapping. To overcome this potential skewing of the dependent variable, the collective estimate of performance disruption is preferred in the thesis. Participants were asked to make a collective estimate of the impact that all impediments had on their upcoming performances. Ratings were on a continuous scale with anchors at 1 (*no disruption*) and 100 (*total disruption*).

A measure of behavioural self-handicapping.

In the second measure, self-handicapping was the manipulation of behaviour before the parallel test. Consistent with previous definitions, the behavioural handicap was termed as *effort withdrawal*. The operational definition for effort withdrawal was the number of attempts at practicing the sham physical skill test. Consistent with previous research (Rhodewalt et al., 1984) the number of practice attempts quantified effort withdrawal. Participants who attempted a lower number of practice attempts were considered as having withdrawn effort when compared to participants who had completed a greater number of practice attempts. The factors of age of the participants along with ethical considerations prohibited the use of other behaviours such as drug and alcohol intake serving as handicaps.

The measure of effort withdrawal occurred in the five-minute break between tests and after the experimental manipulation of performance certainty. Students had the opportunity to practice the physical skill test between the two tests. The issue of publicity of self-handicaps deals with whether or not individuals use self-handicaps for their own benefit or for the audience (self-impression management). The aim of this investigation was not to assess the private versus public nature of self-handicaps. The first dependent variable was relatively private in nature as it was a written response. The practice attempts made by participants were also conducted in as private conditions as possible. At the start of the 5-minute break, participants were offered the opportunity to practice as often as they liked, but asked to remain in the testing area. I stayed in the area but pretended to complete other tasks, while counting the attempts at practice. A practice attempt was defined as a throw at the target.

Feedback Contingencies

In this investigation, there were two levels of feedback contingency and one non-evaluative condition. Participants were randomly assigned to one of the three evaluative conditions by using a sheet of random numbers. In the first condition (*non-contingent failure*), participants received performance scores that indicated that their score was equal to the 25th percentile for their age and gender group. In the second condition (*non-contingent success*), participants received performance scores that indicated that their score on the first test was equal to the 75th percentile for their age and gender group. In the third condition (*control-non-evaluative*), participants received no information regarding their performances. Moreover, all references to testing and comparing of abilities were removed from the researcher's verbal and written instructions for the non-

evaluative group. Information given to participants in the evaluative conditions indicated that there was to be an evaluation of both their physical ability and their future potential in sport. Participants in the non-evaluative condition were told that they were involved in a trial of a test of physical ability that was to be used in a later study.

Debriefing Process

Because the process of deception posed a threat to participants' self-concepts, all participants underwent a debriefing process. All participants were informed of the nature of the deception, the reason for its use, and given contingent feedback on their throwing techniques immediately after the end of the study. All participants had an opportunity to ask questions concerning the rationale for the use of deception. The researcher's phone number and email address were provided to allow students the opportunity to address any issues individually with the researcher. All the individuals received a copy of the results and a letter thanking them for their participation at the end of the study.

Procedure

To access a sample, there was a replication of the protocol outlined in Study 1. All schools received information letters regarding the aims and nature of the study (Appendix K). An information session with students in each school outlined details of the study. Interested students took an information package that contained a parental information letter (Appendix L) and consent forms. Attached to the information sheet was the measure of ego-relevance. The measure was completed and handed in with the consent form. Consent forms ($N = 322$) were returned to the respective schools.

Students who responded on the measure of ego-relevance that their performance outcomes on the physical skill test had little importance to them (score below 7) were excluded at this stage of the investigation ($n = 27$). Individuals who indicated that performance outcomes on the physical skill test were important to them were selected into the study by a random selection process.

The random selection process was the same procedure as that described for Study 1. The random stratified selection process ensured that there were equal numbers in each evaluative condition, an $n = 80$ was chosen from the results of a power analysis of earlier studies. All students not selected in the study ($n = 55$) received a letter (Appendix M) informing them of the reasons for their non-selection and thanking them for their interest in the study. As the total number of students was low, the random selection process was not entirely random. For example, all 15 year old females were selected because only 30 consented. Other low number groups were the 14 year old male group ($n = 36$) and the 16 year old female group ($n = 33$).

At a predetermined time and date, students met with the researcher to complete the sham physical skill test. All testing sessions occurred in a private area as possible. Testing times varied because of school and student commitments. All participants received a package of inventories titled Feelings About Sport Questionnaire, which containing demographic self-report items (Appendix N), the pre-test measure of control, the SIC, and the post-test measure of control. All inventories were on separate pages. All participants were instructed to complete the demographic information only. To standardise the protocol, a prepared script of instructions and information was read out to

students. All participants were then told the same basic instructions and information about the study. Given the nature of the study and the circumstances under which it was conducted, there was a degree of incidental conversation between the students and myself. The instructions provided to the students before the tests resembled those given in other self-handicapping research. Participants in the evaluative and non-evaluative conditions received different information about the purpose of the study. In the instructions that follow, the words in parentheses denote words that were substituted for the non-evaluative group. The alternative words were used to reduce the perception of evaluative threat. The instructions to participants in the non-evaluative condition differed from those participants in the evaluative condition. Instructions to participants in the non-evaluative condition contained no reference to the comparison of participants' scores to that of the performance data. Participants in the non-evaluative conditions were told:

Your participation in the trial is solely to evaluate the test items. No scoring procedure will be carried out. I am very interested in your opinions about the various test items and your perception of them. After the trials, you will be only asked for your opinion on the test items. All opinions will be strictly confidential. The trial involves you standing behind the white line and throwing a plastic ball with an overarm throwing action. You need to aim to get the ball to hit the target behind the screen. If you look at the target, you will see that it has three rings. If the ball lands in the outer white ring you will score 1 point, in the inner blue ring, 5 points, and in the centre red ring 10 points. This study involves two trials with three attempts for each trial. At

the end of the first trial, you will have an opportunity to answer some questions about the test items. You will have a five-minute break in between trials. OK, let me remind you. You have three attempts at throwing the ball into the circle. After the first trial you will have a 5-minute break in which you can practice the test. Are there any questions? I will give you a demonstration of the test.

Participants in the evaluative conditions were told:

The test procedure involves comparing your performance scores on the test against established percentile scores for your age and gender. The test involves you standing behind the white line and throwing a plastic ball with an overarm throwing action. You need to aim to get the ball to hit the target behind the screen. If you look at the target, you will see that it has three rings. If the ball lands in the outer white ring you will score 1 point, in the inner blue ring 5 points, and in the centre red ring 10 points. The test involves two tests with three attempts for each test. You will be given your first test score immediately after the first test. On the same piece of paper, you will also be able to assess your performance against your counterparts by comparing it to performance percentiles. You will have a five-minute break in between tests. Your break starts after you receive your first test performance score. OK, let me remind you. You have three attempts at throwing the ball into the circle. The combination of all three attempts will give a performance score. After the test you will have a five minute break in

which you can practice the test. Are there any questions? I will give you a demonstration of the test.

All participants received a demonstration of how to complete the test. All participants then completed the first control measure before beginning the first test. I stressed the importance of completing all answers honestly and reminded students that their answers and performance outcomes would remain confidential. All participants then completed the first test.

Immediately after the first test all participants received either their performance scores (non-contingent success and non-contingent failure) or no information about their performance (non-evaluative condition). Participants in the evaluative and non-evaluative conditions received different information. In the evaluative conditions, participants received their deceptive first test performance scores on a piece of paper marked "Official Test Result". The result sheet also contained the age and gender relevant percentile scores for the participants. The instructions given in the evaluative conditions were as follows:

Thank you for completing the first test. On the piece of paper is your first test performance score. You will be able to compare your score with established performance scores for your age and gender group that are on the same piece of paper. Percentiles indicate where you are in comparison to your peers. For example if your score is equal to the 75th percentile, that means you have performed better than 74% of your peers.

All participants in the non-evaluative condition were told:

Thank you for completing the first trial. I am now interested in your perceptions about the test. On the response sheet, several questions relate to how you feel about the test, please fill out your responses. Usually your first response is your best response.

After participants had completed reading their performance scores, or when the participants in the non-evaluative condition had completed the items related to their perceptions of the test items, all participants received the following instructions:

Before beginning the second test (trial), you can have a five-minute break. You may practice the test during your five-minute break. In fact, previous results suggest that practice has a positive effect in successfully completing the test (trial). Other participants have said that by practicing they were able to get the ball into the target area consistently. Your 5-minute break starts now, and it would be great if you can stay in the room for your break. There is a drink on the table if you need one. I need to make some calculations from previous tests (attempts) so if you could not interrupt me for the next few minutes I would appreciate it. Are there any questions?

After delivering the instructions, I sat down and pretended to work. Each time the participants practiced throwing the ball, I recorded the throw as one attempt. At the end of the five minutes, all participants received the following instructions:

OK, We will start the second test (trial). Before beginning, please complete the second part of the questionnaire. Remember anything that you write on the paper is confidential. Only you and I will know what is written. The second part of the questionnaire has instructions on the top of the page, so please read them carefully and use the pencil to respond. The questions relate to any factors that may hinder your ability to complete the test (trial). We know that a number of factors can influence performances on tests (trials). For example, if you have an injury, that may hinder you from completing the test (trial) to the best of your ability. Similarly being upset can cause you to perform below your best. Follow the instructions on the sheet. When you have finished, place your sheet in the box on the table and then you can start the second test (trial). Are there any questions? OK, remember all responses on the sheet are confidential, please begin, and when you are finished, you can start the second test (trial).

All participants were instructed to complete the SIC inventory and the second measure of control. Once participants had finished the two inventories, the procedure was halted and all participants were debriefed. Participants in the non-evaluative condition were told:

Thank you for participating in this investigation. I need to tell you that there were aspects of this study that I withheld from you. I told you that I was only interested in your opinions about the test items, whereas I was interested in the strategies you might have used to handicap your performance. We know that sometimes individuals report excuses or do not practice as hard as others before they compete. This was the real purpose of the investigation. You

were part of a control group. As a control group, I wanted to compare your use of handicaps with other groups' use of handicaps. As a control group participant, I deliberately withheld your performance score on the first trial. If you would like that score I have it here for your now. I apologise for this, but I do have your correct scores here to share with you now. If you have any questions or concerns about me giving you deceptive scores you can ask me now or if you want you can contact any of the people listed on the information form and talk to them. In case you have lost that sheet, I have another.

Participants in the evaluative groups were told:

Thank you for participating in the test. I need to tell you that there were aspects of this study that I withheld from you. I was interested in how you responded to the type of feedback that you were given. To do that I changed your performance scores to indicate that you had succeeded or failed regardless of how you actually performed. I did this so that I could measure whether or not you used an excuse such as illness or whether you withdrew effort between the tests. I apologise for this, but I do have your correct scores here to share with you now. If you have any questions or concerns about me giving you deceptive scores you can ask me now or if you want you can contact any of the people listed on the information form and talk to them. In case you have lost that sheet, I have another.

At this point of the study, I gave participants' their correct scores and discussed any concerns that the students had with the procedure. Participants were asked not to discuss the study with other students. Nonetheless, given the nature of the school environment there was no way of ensuring that this did not happen. No student contacted the listed researchers or made representation to the researcher, parents, or the principals with concerns regarding the conduct of the study.

Design and Analysis

Several statistical procedures were used in this study. Multiple dichotomy and cross-tabulation analysis assessed differences in the frequency of male and female participants' reports of impediments. Means, standard deviations, and confidence intervals were calculated for participants in each of the three feedback contingency conditions on the dependent variables of practice attempts and performance disruption. To assess the success of the feedback manipulation an analysis of covariance (ANCOVA) assessed differences in participants' perceptions of control across the feedback contingency conditions. In the model, the second measure of perception of control (post experimental manipulation) served as the dependent variable with the first measure (pre experimental manipulation) as the covariate. The three feedback contingency conditions, 3(non-contingent success, non-contingent failure, & non-evaluative control) served as the independent variables. Measures of effect size, eta-squared and Cohen's *d* (Cohen, 1988) are reported. An assessment for the assumptions for ANCOVA showed all results were within critical thresholds (Hair, Anderson, Tatham, & Black, 1995). There was no transformation of data.

A between-groups design was the primary means of assessing differences between the feedback contingencies and gender on each of the dependent variables. An analysis of variance (ANOVA) was used to test the research hypotheses. The model used feedback contingencies 3 (non-contingent success, non-contingent failure, & control) with gender 2 (male & female) as independent variables. The dependent variables were effort withdrawal and performance disruption. All data was assessed for the various requirements of ANOVA (Hair et al., 1995). There was no transformation of data as all results were within acceptable tolerance levels (Hair et al.). The sample met the minimum requirements for group sizes. Estimates of power for a six group ANOVA indicated that a group size of 30 would be suitable to detect medium to large effect sizes with approximately 70 per cent power (Cohen, 1988). All statistical analyses were calculated with SPSS (1999).

Results

Perceived Impediments to Performance

Participants in the study gave an array of a priori excuses. The results of a multiple dichotomy analysis and a cross-tabulation analysis are presented in Table 6. All participants' responses are included regardless of evaluative condition. Non-selected impediments have been excluded. The statistics in the count column represent the number of respondents who nominated each of the listed perceived impediments. The percentages of cases represent the number of respondents who nominated each of the perceived impediments as a percentage of the total number of generated responses. The results of a cross-tabulation analysis to assess gender differences in the reported perceived impediments self-

handicaps are presented in the last two columns of Table 6. The reported percentages for males and females are the two-way table total percentages.

Of the total sample ($N = 240$), 86 participants did not report experiencing any of the listed impediments. The results for the remaining participants ($n = 154$) revealed that young people reported experiencing a number of impediments before the parallel test.

Table 6

Summary of Frequency Statistics for Perceived Impediments to Performance

Self-handicaps	Count	Percentage		Male	Female
		Cases	Percentage	Percentage	Percentage
I've been tired	26	16.9	3.8	2	
I've had too much homework	46	29.9	5.2	5.2	
I've had a sport injury	66	42.9	6.1	8.8	
I've had family problems	45	29.2	5	5.2	
I've had peer problems	23	14.9	2.7	2.5	
I've had team problems	5	3.2.7	.7	.5	
I've had personal problems	28	18.2	3.8	2.5	
I've had late nights	51	33.1	5.4	6.1	
I've had a bad day at school	44	28.6	5.4	4.5	
I've not been motivated	59	38.3	6.1	7.2	
I've had an illness	50	32.5	5.2	6.1	

Of the cited impediments, the most frequent was the claim of having experienced a sports injury. Other impediments of note because of their high

frequency and their applicability to factors other than ability were no motivation (38.3%), late night (33.1%), illness (32.5%), and homework load (29.9%). There were no additional reports of impediments listed in the open-ended section.

A cross-tabulation analysis of male and female responses showed that males reported the impediment of a sports injury and no motivation equally ($n = 27$), which represented 6.1 per cent of the total sample. Females reported the impediment of sports injury ($n = 39$) and no motivation ($n = 32$), which represented 8.8 per cent and 7.2 per cent, respectively. The pattern of reporting a sports injury as an impediment is generally consistent with other documented evidence. The self-reported handicap of a sports injury could be categorised as a performance related handicap because it implicates a factor other than ability as an excuse for possible flawed performance.

Apart from self-reports of a lack of motivation, the next most frequently cited impediments were illness, homework, and a bad day at school. These impediments could be construed as other related because they imply factors that are not connected to sports performance. The pattern of young people reporting non-ability factors as impediments is generally consistent with that reported in other physical domain studies. Moreover, the result is generally consistent with the intent of self-handicapping strategies being a means of severing or obscuring the link between bad outcomes and ability. Overall, the number of impediments cited by participants is surprisingly high and gives support to the notion that the sports world is full of individuals who self-handicap.

Validation of Performance Uncertainty

The definition of performance uncertainty adopted for this thesis related to a loss of control over test outcome. The intent of the experimental manipulation of performance scores was to cause individuals to experience performance uncertainty because of the non-contingency of the performance feedback scores. The predicted direction for the results were that participants after experiencing either of the non-contingent feedback conditions would report lower perceptions of control than participants in the non-evaluative control group. Mean scores and standard deviations for perception of control are reported in Table 7.

Table 7

Descriptive Statistics for Perceptions of Control

Condition	<i>M</i>	<i>SD</i>
<u>Pre Experimental Manipulation</u>		
Non-contingent Failure	3.13	.82
Non-contingent Success	3.30	.90
Non-evaluative Control	3.12	.85
Total	3.18	.85
<u>Post Experimental Manipulation</u>		
Non-contingent Failure	2.28	.73
Non-contingent Success	2.61	.51
Non-evaluative Control	3.18	.94
Total	2.69	.83

Before the first test, all participants reported having similar confidence at being able to control the test outcome, non-contingent success ($M = 3.30$), non-contingent failure ($M = 3.13$), and control ($M = 3.12$). After exposure to the feedback contingencies, participants in the non-contingent success ($M = 2.61$) and non-contingent failure conditions ($M = 2.28$) reported having lower scores for control and participants in the non-evaluative control group condition reported an increase in scores for control ($M = 3.18$).

The result of the ANCOVA is presented in Table 8. The result of a test of between-subjects effects for the main effect of feedback contingency condition was significant, indicating participants in each of the three feedback conditions differed on their post experimental manipulation perception of control score. Using η^2 as the measure of effect size, feedback contingency condition accounted for 24 per cent of the total variability in perception of control score.

Table 8

Summary of ANCOVA Results for Perception of Control

Source	<i>df</i>	<i>F</i>	η^2	Power
Between Subjects				
FBC	2	38.71	.24	1.0
Pre Control	1	44.52	.15	1.0
<i>S</i> within-group error	236	(.47)		

Note. FBC = Feedback Contingency Condition. Values enclosed in parentheses represent mean square errors. *S* = subjects.

Post hoc comparisons between the three feedback conditions showed that participants in the non-contingent failure condition differed significantly from

participants in the non-evaluative condition ($p = .0001$), and participants in the non-contingent success condition ($p = .002$) on the post measure of control.

Participants in the non-contingent success condition also differed significantly ($p = .0001$) from participants in the non-evaluative condition. Using Cohen's d for effect size, there was large effect size ($d = .95$) between the non-contingency failure group and the non-evaluative group, which is equal to 51 per cent non-overlap between mean scores. There was a medium effect size ($d = .45$) between the non-contingent failure group and the non-contingent success group, which translates into a 27 per cent non-overlap. Between the non-contingent success group and the non-evaluative group, there was a medium effect size ($d = .60$), which is equal to a 38 per cent non-overlap of mean scores.

It seems clear that the manipulation was successful in the expected direction. The mean score for the non-contingent failure group was equal to the 82nd percentile for the non-evaluative group. The mean score for the non-contingent success group was equal to the 73rd percentile of the non-evaluative group. Finally, the mean score for the non-contingent failure group was at the 66th percentile of the non-contingent success group. It would appear that participants exposed to the non-contingent failure and non-contingent success manipulation reported less control after the performance feedback manipulation than participants in the non-evaluative condition. Moreover, the non-contingent failure group had lower scores on the measure of control than participants in the non-contingent success group. The results are supportive of the assumption that participants exposed to the feedback contingencies experienced significantly more uncertainty about their performances on the second test than did participants in the non-evaluative condition.

ANOVA for the Main Effects of Feedback Contingency Conditions, Gender, and their Interaction

Descriptive statistics for the number of practice attempts and level of self-reported performance disruption are presented in Table 9.

Table 9

Mean and Standard Deviation Scores for Self-handicaps

Self-Handicap Type	FBC	Gender	<i>M</i>	<i>SD</i>	
Practice attempts	Control	Male	4.95	3.15	
		Females	4.67	1.75	
	Failure (NC)	Male	4.97	1.62	
		Females	4.94	1.70	
	Success (NC)	Male	5.30	3.10	
		Females	5.07	1.80	
	Total		Males	5.07	2.70
			Females	4.94	1.74
Self-reported Disruption	Control	Male	8.50	13.24	
		Females	14.30	14.16	
	Failure (NC)	Male	26.77	10.59	
		Females	25.75	8.11	
	Success (NC)	Male	12.05	14.67	
		Females	9.87	13.02	
	Total		Males	15.77	15.08
			Females	16.64	13.71

Note. FBC = Feedback Contingency Condition, NC = non-contingent

Reduced Practice as a Self-handicap

Analysis of the hypothesis related to participants' use of effort withdrawal as a means of self-handicapping and for the associated hypothesis for a gender difference revealed no significant effect for the main effects of gender, feedback contingency condition, or their interaction. Data relevant to this analysis are displayed in Table 10. The first hypothesis predicted that participants who experienced performance uncertainty because of non-contingent success would self-handicap by practicing less before a parallel test of physical ability than participants in the non-contingent failure and non-evaluative conditions. In general, the results indicated that the null hypothesis should be accepted.

Table 10

Summary of ANOVA Results for Feedback Contingency Condition, Gender, and their Interaction

Source	<i>df</i>	<i>F</i>	η^2	Power
Between Subjects				
FBC	2	.53	.005	.13
Gender	1	.31	.001	.08
FBC X Gender	2	.08	.001	.06
<i>S</i> within-group error	234	(5.24)		

Note. FBC = Feedback Contingency Condition. Values enclosed in parentheses represent mean square errors. *S* = subjects.

Using eta-squared as the measure of effect size, the main effect of feedback contingency was small, accounting for .5 of a per cent of the total availability in the practice attempts score. There was also a small effect size for the variable of gender and its interaction with feedback contingency ($\eta^2 = .001$). The two

independent variables and their interaction accounted for .7 of a per cent of the variability in the dependent variables scores.

Performance Disruption as a Self-handicap

Analysis of differences in the use of self-reports of performance disruption by feedback contingency and gender revealed a significant effect for the main effect of feedback contingency condition, but not for gender, and the interaction between feedback contingency condition and gender. Data relevant to this analysis are displayed in Table 11. The significant result for the main effect of feedback contingency condition revealed that participants reported significantly more performance disruption because of the type of feedback.

Table 11

ANOVA Results for Feedback Contingency Condition, Gender, and their Interaction

Source	<i>df</i>	<i>F</i>	η^2	Power
Between Subjects				
FBC	2	38.82*	.24	1.0
Gender	1	.28	.001	.08
FBC X Gender	2	2.37	.02	.47
<i>S</i> within-group error		234	(156.32)	

Note. FBC = Feedback Contingency Condition. Values enclosed in parentheses

represent mean square errors. *S* = subjects.

* $p < .0001$

Using eta-squared as the effect size measure, the variable of feedback contingency accounted for 24 per cent of the total variance in the performance disruption score. The variable of gender only accounted for .1 per cent of the

total variance in performance disruption, with the feedback contingency by gender interaction accounting for 2 per cent of the variance in performance disruption.

Post hoc comparisons (Scheffé) indicated that the significant effect for feedback contingency condition was primarily due to participants in the non-contingent failure group reporting significantly more performance disruption than participants in both the non-evaluative control and non-contingent success groups. Data relevant to this analysis is revealed in Table 12. For the variable of self-reported performance disruption, the post hoc results showed that participants in the non-contingent failure group ($M = 26.47$) reported significantly higher levels of performance disruption before the parallel test than did participants in the non-evaluative control group ($M = 11.30$) and participants in the non-contingent success group ($M = 10.92$).

Table 12

Summary of Mean Differences in Self-reported Performance Disruption by Feedback Contingency Conditions

Group	Group	Mean difference	95% Confidence Interval	
			Lower	Upper
1	2	-14.86*	-19.62	-10.09
	3	.43	- 4.32	5.20
2	3	-15.30*	- 20.06	-10.53

Note. 1 = Non-evaluative control, 2 = Non-contingent failure,

3 = Non-contingent success.

* $p < .05$ (adjusted for multiple comparisons, Bonferroni)

Using Cohen's d (1988) as the measure of effect size, there was a large effect size ($d = 1.0$) between the non-contingent failure group and the non-evaluative group, which is equal to a non-overlap of 55 per cent. The mean score of the non-contingent failure is at the 84th percentile of the non-evaluative control group. There was a large effect size ($d = 1.1$) between the non-contingent failure group and the non-contingent success group, with a non-overlap of 59 per cent. The mean score of the non-contingent failure group is at the 86th percentile of the non-contingent success group. Finally, the effect size between the non-contingent success group and the non-evaluative control group was small ($d = .03$), with a non-overlap of 21 per cent, indicating that the mean score of the non-contingent success group is at the 62nd percentile of the non-evaluative group.

Discussion

The aim of the present study was to examine group differences in self-handicapping responses, in essence, a test of the two formulations for self-handicapping (Jones & Berglas, 1978; Snyder & Smith, 1982). Specifically, young people were exposed to either of two types of deceptive performance scores and then given an opportunity to use two types of self-handicap before a subsequent evaluation. Additionally, differences in self-handicapping type were examined across gender.

The second research hypothesis predicted that participants in the non-contingent failure group would self-handicap by citing more performance disruption than participants in the non-contingent success and non-evaluative groups. The associated hypothesis for gender predicted that males and females would not differ in their use of self-reports of performance disruption as a self-

handicapping strategy. The results are generally supportive of the second research hypothesis and its associated gender hypothesis.

A significant difference was evident between feedback contingency conditions for the variable of performance disruption. Generally, the results lead to the conclusion that participants who believed that they had failed self-handicapped by reporting significantly higher levels of performance disruption than their counterparts who believed they had succeeded and their counterparts in the non-evaluative group. The pattern of reporting performance disruption as a self-handicap was equal across gender.

Self-reports as Self-handicaps

Overall, results from the multiple dichotomy analysis revealed that young people, regardless of gender were familiar with using self-reports of impediments as handicaps. The results of the frequency analysis is consistent with that reported in the literature for the physical domain. Specifically, young people are willing to cite numerous impediments before settings where sporting ability is to be evaluated. It seems that the use of self-reports is a common phenomena for the physical domain, which is consistent with the Jones and Berglas (1978) assertion that the sport world is full of athletes who self-handicap. The result indicates that young people are both knowledgeable about using impediments before contests and aware that such behaviour is acceptable.

A possible explanation for the consistency in the frequency results is the use of the checklist (SIC). The checklist may have altered the relationship between participants and the dependent variable because it provided a list of excuses that were "legitimate" for the study. No participants reported any additional

impediments in the open-ended section. This pattern suggests that the checklist may have alerted participants to the legitimacy of excuses as a priori explanations for flawed performance.

One outcome of the frequency results is that young people in their self-reporting of impediments understand the implication that self-handicaps operate to cloud the link between flawed performance and ability. This understanding implies that the use of self-avowals is a cognitive strategy. The sample in the present study was restricted to the age groups 13 to 16, and what is not known is when individuals start to use self-avowals as a means of self-handicapping.

Non-contingent Success and Self-handicapping

Unlike the outcomes of previous studies (Berglas & Jones, 1978; Kolditz & Arkin, 1982; Tucker, Vuchinich, & Sobell, 1981), there was no difference between feedback contingency groups and the use of effort withdrawal as a self-handicapping strategy. The expectation was that individuals who received non-contingent success feedback on a first test of ability would experience uncertainty about a subsequent test, and in response would self-handicap by reducing their amount of practice compared to individuals in the non-contingent failure group and the non-evaluative group. Moreover, the pattern of self-handicapping for participants in the non-contingent group would be evident in males but not females. There was no support for the expected relationship between the antecedent condition of non-contingent success and self-handicapping. Moreover, there were no differences in self-handicapping between gender groups. There are several possible explanations for the rejection of the first research hypothesis and its associated gender hypothesis.

It is possible that the experimental manipulation for the non-contingent success condition (75th percentile) was insufficient and subsequently participants in that condition did not experience a sufficient threat to warrant the use of self-handicapping. Previous studies protocols (Berglas & Jones, 1978; Kolditz & Arkin, 1982; Tucker et al., 1981) have operationalised success at the extreme end of the performance spectrum. In this study, the deception was less dramatic in several ways; the percentiles were based on real data rather than illusionary, and the percentiles indicated a lower level of success. The effect sizes between feedback contingency groups on the pre experimental manipulation scores for perception of control score indicate that there was a larger effect between the non-contingent failure group and the non-evaluative group than between the non-contingent success group and the non-evaluative group. Thus, participants in the non-contingent success condition experienced less threat compared to the non-contingent failure group. Perhaps the level of threat was insufficient to cause participants in the non-contingent success group to self-handicap.

It is possible that evaluative threat in the present study posed a confounding effect on participants in the non-contingent success group. Although participants reported less control over the second test, the first test success outcome may have undermined their motivation to self-handicap. Self-handicapping is a strategy designed to cloud the link between ability and flawed performance. The first test success, although unexplained and posing some evaluative threat, along with the immediate parallel test may have provided a situation that did not warrant a self-handicapping response. For example, after the performance feedback manipulation, participants may have perceived the situation as already ambiguous. Participants in the non-contingent success group may have perceived

that after the parallel test there were two possible outcomes: either they would have a 50 per cent success rate (one win and one loss) or at best, a total success rate (two unexplained successes). In the first instance, any evaluation of ability would have been ambiguous because of the one win, one loss outcome. Under such a circumstance, the need to self-handicap by withdrawing effort might have been viewed as an unnecessary strategy. In the second instance, total success might have been unexplained but the outcome was still successful. The one-off outcome may not have been sufficient to threaten self-esteem.

Jones and Berglas (1978) in their initial proposal argued that a positive yet tenuous self-concept arose from a history of non-contingent success. One-off experiences of success, such as that in the present study, may not create the positive yet tenuous self-concept described by Jones and Berglas. Moreover, the one-off success experience may not be sufficient to shake one's belief in one's ability. Long experiences of unexplained success might give rise to the type of self-handicapping whereby young people manipulate their behaviour to self-handicap, for example, withdrawing from sport, procrastination, and excuse-making. Regardless of the outcome of the present study, coaches and teachers should not disregard the effect of non-contingent success feedback on young people. The result from the manipulation indicates that non-contingent success causes young people to doubt their ability to control the outcome of a test evaluative of ability. What the present results do not show is the effect of a continual history of non-contingent success. This is a possible area of future research, but given the ethical considerations, one that will possibly remain unanswered.

The operationalisation of effort withdrawal in this study was the amount of practice attempts on the sham test. It is possible that this definition of effort withdrawal might not truly reflect effort withdrawal as there was no baseline measure of practice, thus it is somewhat speculative to suggest that young people did not use effort withdrawal as a self-handicap. Future studies investigating effort withdrawal as a form of self-handicapping should establish a baseline measure of effort to establish causality.

Finally, the result is only applicable to tasks that have high ego-relevance because of the participant selection process. It has been shown that perceptions of ego-relevance of the task alter self-handicapping responses. Thus, it is possible that young people may use effort withdrawal as a self-handicap when the task has different levels of ego-relevance.

Non-contingent Failure and Self-handicapping

There was support for the second hypothesis of a relationship between self-handicapping and the antecedent condition of non-contingent failure. The result supports the Snyder and Smith (1982) hypothesis that individuals use self-avowals of impediments to self-handicap when they are uncertain of successful performance outcomes. Moreover, the result indicates that performance uncertainty caused by failure is associated with the tendency to self-handicap. This is the first evidence that young people will self-handicap because of previous failure on an evaluative test of physical ability.

The present result for the Snyder and Smith (1982) hypothesis has consequences for coaches and teachers of young people. Often in attempting to be successful at achievement tasks, young people experience failure. The

experience of failure is not a potential problem: indeed, protecting young people from the experience of failure can itself create problems. Ansbacher and Ansbacher (1967) interpreted Adler's notion of self-defensive strategies as being positive ones, at least in the short term. The use of self-avowals as a means of providing psychological distance between the flawed performance and the individual's self-image can be seen in a positive light because the self-handicap possibly allows continual engagement in achievement tasks, despite the presence of anxiety about performance outcomes. The self-handicap is a cognitive strategy that allows individuals to preserve self-esteem in the face of failure, and hence allows them repeated attempts to achieve success. What is not known is whether individuals would forgo the use of self-handicaps when feedback becomes contingent. Information about how to change a failure or why a failure occurred might remove any anxiety about performance and therefore remove the need to self-handicap. This is a potential area for future research.

The consequence of the results for non-contingent failure for coaches and teachers is that their students or athletes will use self-handicaps when they experience failure because of the aversive nature of failure. If coaches and teachers are aware of the nexus between failure and self-handicapping, then they can change either the evaluative circumstances of the environment or ensure that young people are made aware of the reasons for failure and the strategies that can alter failure to success. Moreover, teachers and coaches should also be more aware that they could be a source of an emphasis on achievement as a criterion for self-worth because they emphasise achievement as a criterion for self-worth. Employing teaching strategies that encourage multiple bases of personal

evaluation is a strategy that can be employed to contain the effects of failure in terms of humiliation, disappointment, and anxiety.

Finally, the results from tests of both hypotheses indicate that the antecedent condition of non-contingent success did not cause differences in self-handicapping. It would appear that unexplained failure has more immediate consequences than does unexplained success. The obvious question is why. One possible explanation is the saliency of effort withdrawal as a self-handicapping strategy for the physical domain. Recapping the discussion in Chapter 2, effort withdrawal may place young people at cross-purposes. Effort is valued in sport contexts and the withdrawal of effort could sabotage performance in a number of ways, for example, withdrawing effort during training may result in exclusion from the team. Self-handicaps are a means of obscuring the link between ability and flawed performance, but they should not interfere with performance (Self, 1990). Young people could have perceived the strategy of not practicing as increasing the likelihood of flawed performance. Future research should investigate the saliency of other types of behaviours as self-handicaps for the physical domain.

In sum, the present study, to the best of my knowledge, documents the first test of the two formulations for self-handicapping (Jones & Berglas, 1978; Snyder & Smith, 1982) for young people engaged in achievement behaviour within the physical domain. The results of the present study suggest that for the physical domain, young people respond to unexplained failure by self-handicapping in a manner that is consistent with that proposed by Snyder and Smith. Equally important was the result of a non-association for unexplained success and for a non-preference for effort withdrawal as a self-handicap

strategy. An outcome of the present study for the remaining studies in this thesis is that they will only address the antecedent condition of non-contingent failure and differences in the use of self-reports as self-handicaps. An issue that was raised in the present discussion was the question of the onset of self-handicapping, specifically, when do individuals acquire the ability to use self-reports of impediments as a self-handicapping strategy.

CHAPTER 5

Study 3: The Onset of Self-handicapping Behaviour

Study 3 examined the relationship between age and the use of self-handicapping in response to evaluative threat. The study represented the third research aim. Self-handicapping is a strategy designed to obfuscate evaluation of ability when there is the potential to fail (Berglas, 1985). Individuals use such strategies to circumvent the implications of failure. The use of avoidant strategies requires individuals to think abstractly. For example, young people who cheat on academic tests are primarily concerned with demonstrating their ability to others. Thus, cheating becomes a viable strategy only when individuals are able to perceive that cheating will allow others to interpret their performances as being competent. In general, the onset of cheating occurs in early adolescence (Anderman, Griesinger, & Westerfield, 1998). Two aspects of self-handicapping illustrate that abstract thought is also associated with self-handicapping.

First, one assumption of self-handicapping theory (Arkin et al., 1998) is that individuals naïvely take advantage of what Kelley (1971) described as the principles of discounting and augmentation. In effect, the discounting principle signifies that when an outcome is associated with more than one possible cause, the link between the outcome and the individuals will be weaker. In contrast, the augmentation principle indicates that the attribution of causality to a given agent is strengthened if the outcome occurred despite the presence of inhibiting factors (Higgins, 1990). The two possible outcomes of attempts at achievement tasks are success or failure. Using Kelley's (1971) principles, failure is attributed to the handicap not ability, if failure occurs in the presence of a handicap. Conversely,

there is an enhancement of ability if success occurs because success occurred despite the presence of the handicap.

The second assumption holds that individuals need to be able to differentiate between effort and ability (Berglas, 1985; Covington, 1992; Garcia & Pintrich, 1983) to use self-handicaps. For example, if individuals are able to differentiate between the concepts of effort and ability, they understand that effort and ability covary and that doing well without being seen to try by others as a sign of high ability, and that failing following high effort is a sign of lack of ability. If individuals can differentiate between effort and ability, they understand that withdrawing effort in conditions of high evaluative threat blurs the link between performance outcome and ability.

The discussion thus far has linked the use of self-defensive strategies to the ability to think abstractly. One way of approaching the question of the onset of self-handicapping is to examine when individuals gain the ability to think abstractly because if individuals do not possess this ability then their use of self-handicaps would be potentially meaningless. For example, individuals unable to understand that ability and effort covary would apply more effort in the belief that it demonstrates higher ability. The ability to think abstractly coincides with early adolescence (Elkind, 1984). Elkind's overview of Piaget's (1970) theory of cognitive development illustrated the link between certain stages of thinking and age. It gives a basis for predicting that young people aged below 12 may not use self-reports as self-handicapping strategy because they lack the necessary cognitive sophistication to think in abstract terms. To aid clarification, I have adopted the term *young children* for the remainder of this thesis to define young people who have not yet reached the age of 13.

Elkind (1984) defined *cognitive development* in terms of how different periods in individuals' lives are marked by different ways of thinking. For example, he discussed how the transition in style of thinking from concrete, operational thought to formal, operational thought marks the period of adolescence. Formal operations are characterised by the ability to think hypothetically and abstractly. Adolescents at the formal stage can think about thinking and speculate about the possible, as well as the actual. Formal operations differ dramatically from concrete operations, in which young adolescents can think logically but only in terms of the solid and tangible and not in terms of ideas and possibilities. Cognitive growth may occur in some areas of thinking and not in others. The pace of cognitive growth in specific areas is unique to each individual. Elkind described adolescent thinking in terms of being able to think about issues beyond the here and now and into the realm of possibilities. He argued that the adolescent self-consciousness arises out of the imaginary audience. For example, as early abstract thinkers, teenagers are often exclusively concerned about thinking, that is, they are concerned about what they are thinking about others and what others are thinking and feeling about them and their actions.

Generally, Elkind (1984) implied that individuals have varying levels of *cognitive maturity*. I have used the term cognitive maturity to define a level of cognitive development where individuals have the ability to understand abstract concepts. From a cognitive development perspective, self-handicaps might be limited to certain age groups. Abstract thinkers, which normally include adolescents, should have reached a level of cognitive development to enable them to understand how others might interpret their efforts and failures on

achievement tasks. Alternatively, concrete operational thinkers, which normally include younger children, may not have the required level of cognitive maturity to understand how self-handicaps work. There is evidence to suggest that the age of 12 generally signifies the separation between the stages of concrete operational thought and formal operational thought.

A vast body of literature documents the implications of age effects on a variety of psychological constructs. To overview them is beyond the scope of this thesis. For example, Nicholls and his colleagues (Nicholls, 1976, 1978, 1983, 1984a, 1984b, 1989, 1990, 1992; Nicholls & Miller, 1984), in a series of studies, highlights that in terms of cognitive development, the ability to differentiate between abstract concepts is associated with various ages. Nicholls (1989) investigated the ability of children to discriminate between the concepts of luck and skill. He noted that cognitive maturity was a variable in children's abilities to discriminate between those concepts. The results of his study showed that children below nine years of age could not differentiate between the concepts of skill and luck on a series of tasks presented to them. Participants were faced with a task where outcomes were either based on skill or luck. The task required the participants to select, among a number of similar line drawings, the only drawing that matched a standard. In the *skill* condition, participants had to pick an observable line drawing that matched a known standard. The *luck* condition required participants to guess which of several line drawings that were face down matched the standard. Participants rated the amount of effort they applied to each task.

Only participants that were aged from 13 years onwards were able to understand that effort and skill had no role in outcome success in the luck

condition. This outcome was inferred from the measures of effort applied to the task. Adolescents were more selective than young children, in the effort they applied in the luck condition compared to the skill condition. The children, who had not reached a sufficient level of cognitive maturity to understand that skill and effort played no role in success in the luck condition, reported that they applied greater effort in the belief that more effort would equate to more skill and hence greater success on the task. This was borne out by the finding that adolescents spent less time than did young children concentrating and working in the luck condition and more time in the skill condition.

In a similar vein, Boggiano and Main (1986) provided further insight into the relationship between cognitive maturity and the ability to use attributions. In four studies, they investigated children's behaviours reflecting the use of the augmentation principle. They measured the interest shown by children in tasks after the presentation of statements that represented typical contingency situations to the children. For example, in their first study (Boggiano & Main, 1986 Study 1), preschoolers received one of two sets of instructions. Children in the first condition (*contingent*) were presented with the contingency statement (if you do play on the maze game then you can do the picture puzzle). The authors argued that this type of contingency would be well known to the preschoolers, as parents typically used such contingencies. That is, the second activity was a bribe to do the first activity. In the second condition, (*non-contingent*), children were not presented with the *if then* statement. Following the giving of the statements, all participants completed maze and picture puzzles. Following completion of the first round of games, the researchers excused themselves from the room, but noted to the participants that there were some new maze and picture puzzles on a

table that the children could try before starting the second round of games. The researchers then measured the amount of time children spent playing on each of the types of games.

The authors hypothesised that children in the contingent condition compared to children in the non-contingent condition would spend more time playing on the picture puzzles than on the maze puzzles when given the opportunity in the free play time. Results showed that children in the contingency condition played on the puzzle games more than children in the non-contingent condition, demonstrating that children understood the augmentation benefits of the if then instruction.

In the final study (Boggiano & Main, 1986, Study 4), the authors changed the contingency condition by using the instruction “play with activity 1 because he has activity 2”. The researchers hypothesised that only older children (aged over 7 years) would show a decrease in motivation to play with activity 1 and an enhanced motivation to play with activity 2 because of the unfamiliar bribe statement. They argued that only older children would understand the augmentation benefits because their use of attribution principals was not context bound.

The results showed differences between children of different ages on the amount of time spent playing on the activity and the amount of interest shown in the bonus activity during a free play period. Older children spent more time on the bonus activity than did the younger children. Younger children showed more interest in activity 1 than did older children, whereas none of the older children played with activity 1 in the free play period. Boggiano and Main (1986)

suggested that children under 7 years of age lacked the cognitive maturity to understand the attribution processes contained within the contingency statement.

To summarise, there is literature to support the premise for age effects in the use of causal schemes and the ability to differentiate between abstract concepts. Specifically, the vast body of work by Nicholls and his colleagues (Nicholls, 1976, 1978, 1983, 1984a, 1984b, 1989, 1990, 1992; Nicholls & Miller, 1984) highlights differences in the ability to differentiate abstract concepts because of age. Similar, Boggiano and Main's (1986) work highlights age effects for the effective use of attributions. Nonetheless, despite what is known about age differences in the use of pot hoc attributions, there is a sparsity of empirical evidence for age related differences in the use of self-handicaps.

Evidence for the Onset of Self-Handicapping

A body of literature (Garcia & Pintrich, 1983; Kimble, Kimble, & Croy, 1998; Midgley, Arunkumar, & Urdan, 1996; Midgley & Urdan, 1995; Ryska et al., 1999; Ryska et al., 1998) documents evidence that suggests an association between age groups and self-handicapping. Nonetheless, none of the studies contained an experimental manipulation of performance certainty or measures of performance certainty. Central to the Kimble et al. (1998) study was their argument that if cognitive development were linear, the level of self-consciousness about evaluations should also increase with age. In general terms, the more aware children are of the implications of the outcomes of an evaluation for their self-esteem, the more likely they are to use self-handicaps. As young children are less self-conscious than older children, young children would be less apt to self-handicap their performance. To test this argument, Kimble et al.

compared the use of self-handicapping across two age groups. Their study involved an experimental manipulation of participants' levels of self-consciousness about performance outcomes on a test of intelligence. They then examined differences in the use of effort withdrawal as a self-handicap across age, sex, and self-esteem groups.

The experimental manipulation of self-consciousness involved altering when participants self-affirmed their positive characteristics. Kimble et al. (1998) argued that completing a self-esteem test just before a test would provide an immediate reminder of personal resources. Half the participants completed the measure before a practice session of the test with the remaining participants completing the self-esteem measure after the actual test. By having the participants complete the self-esteem measure before practice, Kimble et al. predicted that high self-esteem participants would not be threatened by the evaluation threat posed by the test because they had self-affirmed their positive characteristics before the test. Kimble et al. reasoned that by having participants self-affirm their positive characteristics they would lessen any evaluation threat posed by the upcoming test. Kimble et al. used the variables of trait self-esteem (*high & low*), school grade (3 & 6), order of self-esteem test (*before & after*), and importance of the test (*high and low*) to examine differences in the use of practice effort as a self-handicap. Practice effort was a measure of the amount of time each student spent practicing before the actual test.

The participants received one of two different descriptions of the test purpose. One group of children understood the study to be a trial of a classroom game (*game condition*) with a second group of children understanding the study to be an intelligence test (*test condition*). Regardless of the experimental

condition, all participants completed a practice run of the questions. Instructions given to children in the game condition indicated that their performance scores were not important, but practice on the trial questions would affect their scores on the actual test. Instructions given to children in the test condition indicated that the upcoming test was a sensitive and important test of intelligence and that their practice efforts on the trial questions would affect the accuracy of their test performance results. All participants then completed practice questions.

The results showed that third grade boys categorised as having low self-esteem, self-handicapped by practicing less before the actual test than their high self-esteem counterparts did. A similar trend was evident for sixth graders, but only when the measurement of self-esteem occurred before practice sessions. Thus, children aged between 7 and 8 (third graders) seemed to have reached a level of cognitive maturity to understand that under some circumstances the withdrawal of effort protected their self-esteem. Nonetheless, the result for the 11 and 12 year olds (sixth graders) was suggestive that practice effort was affected by self-esteem in combination with self-affirmation. Thus, older boys had an increased awareness of the self-relevance of evaluative implications and handicapped accordingly.

The results of Kimble et al. (1998) are generally supportive of the assumption of an association between age group and self-handicapping. It would seem that young children who have low self-esteem self-handicap by practicing less compared to their counterparts in the high self-esteem group, but the result was not dependent upon the occurrence of a self-affirmation of ability. Nonetheless, sixth grade boys categorised as low in self-esteem, and who were reminded of their low self-affirmations before a test, self-handicapped by

withdrawing effort compared to their counterparts who completed the self-esteem inventory after the actual test. The researchers surmised that the pattern of results reflected the developmental aspects of self-consciousness, where older children understood, and thus focused on the implications of their performances.

Other evidence for the onset of self-handicapping is less clear (Garcia & Pintrich, 1983; Midgley et al., 1996; Midgley & Urdan, 1995). For example, Garcia and Pintarch (1983) documented that boys aged 13, but not girls, who were categorised as poor students based on academic performance indicated that they would use self-handicaps on tests of intelligence. Midgley and Urdan (1995) in a study of the relationship between personality characteristics and self-handicapping reported that that boys aged 14 who were categorised as low achievers in academic performance, also used self-handicaps. This age related trend was not evident for girls. Lastly, Midgley et al. (1996) documented self-handicapping behaviour in boys and girls aged 14 who were categorised as ego-orientated, and had negative attitudes about school performance.

Research in the physical domain has produced similar evidence. For example, Ryska et al. (1998) examined the relationship between anxiety and the use of self-reports of impediments in a sample of junior elite cross-country runners. They established that children aged 11 and below, regardless of anxiety levels, did not report any impediments. Likewise, a second study (Ryska et al., 1999) documented that young people aged between 10 and 17 used self-reports of impediments to self-handicap their upcoming important performances. Nevertheless, the authors failed to report any differential age effects in the use of self-handicaps.

Review of the Evidence for the Onset of Self-handicapping

The overview of Elkind (1984) on cognitive development based on Piagetian principles forms a conceptual basis for exploring the onset of self-handicapping. Specifically, that the onset of a more formal mode of thinking that allows abstract thought is associated with early adolescence. Self-handicapping, which is an attributional strategy, requires individuals to have the cognitive ability to differentiate between abstract concepts such as effort and ability. Moreover, it is speculated that individuals understand the attributional outcomes of using self-handicaps. Kimble et al. (1998) has provided evidence that some children as young as 7 and 8 withdrew effort as a self-handicapping strategy, but older children used self-handicapping in a more sophisticated manner. Other evidence was less clear, with quasi-experimental studies providing evidence of some age related effects. Nonetheless, all evidence for age effects and self-handicapping was garnered from studies that did not experimentally manipulate performance certainty.

To date, research describing the onset of self-handicapping has not addressed a number of issues. Specifically, the onset of self-handicapping and whether young children (aged 10) faced with evaluative threat have the cognitive ability to use self-reports of impediments as handicaps has received little empirical attention. Therefore, the purpose of this investigation was to extend previous research by examining differences in the use of self-avowals of performance disruption as a self-handicapping strategy for young people facing evaluative threat because of a prior history of non-contingent failure on a test of physical ability and for young people in a non-evaluative control condition. Differences in the self-handicapping between evaluative conditions for each age group were

explored to provide an estimate of age effects for self-handicapping. The present investigation represented the third research aim.

Hypotheses for Study 3

Based on the conceptual understanding of cognitive development I predicted that young children faced with an evaluative threat respond with lower levels of self-handicapping than older children. The first set of hypotheses were,

H₁: In the evaluative condition, young people (aged 13) faced with an evaluative condition would report significantly more performance disruption than young children (aged 10).

The first set of hypotheses reflected the theory that the ability to think in formal operational terms is associated with older children but not younger children. By not being able to consciously think how the use of a prior excuse offers a potential mitigating reason for future failure, young children would not understand how a self-report would provide a mitigating excuse for future flawed performance.

The second set of hypothesis explored the differential use of self-handicapping within age groups. Given the evidence that young children do use excuses but in a rudimentary form that reflects a lack of understanding, it was predicted that younger children would be unable to use the more abstract form of self-handicapping (self-report). Specifically, young children may be able to cite excuses for possible flawed performance but would lack the cognitive sophistication to quantify the impact of an impediment on their performances. Consequently, young children would show no differential in their self-reports of performance disruption between evaluative conditions because of their inability

to abstractly project the level of impact that the handicap has on performance. Young people who are able to think abstractly should be able to quantify the impact of impediments to provide a mitigating excuse for flawed performance. The second set of hypotheses was;

H₂: It was predicted that young children in the 10-year-old group in the non-contingent failure condition would not significantly report higher levels of performance disruption than young children in the 10-year-old group in the non-evaluative condition. Whereas young people in the 13-year-old group and in the non-contingent failure group would report significantly higher levels of performance disruption than their counterparts in the non-evaluative control condition.

Method

Participants

Participants aged 13 were enrolled in high school and participants aged 10 were members of various sport clubs ($N = 80$, $n = 40$ males, $n = 40$ females). Mean age was 11.55 years ($SD = 1.15$). Recruitment from sports clubs occurred in a different district to recruitment from schools. All students were English speaking. The sample was randomly selected using the procedures outlined in Study 2. From the initial sample that consented to participate ($N = 115$), young people who rated the physical domain as low in ego-relevance were excluded from the study ($n = 5$). A stratified random sample was drawn from the remaining participants ($n = 110$) so that there were equal numbers of males and females ($n = 20$) for each age and gender group. Three 10-year-old participants were absent from the testing days.

All participants indicated that they played a range of sports. The most frequent male team sports were Australian rules football, soccer, basketball, and cricket. For females, the most common sports were netball, basketball, and softball. The most common individual sports were athletics and tennis.

Measures and Instruments

Sham Physical Skill Test

All participants completed two tests of the sham physical skill test as used in Study 2.

Feedback Contingencies

The operational definition of non-contingent failure feedback contingency established in Study 1 was used for this study. The non-evaluative condition remained the same as that for Study 2.

Inventories

The measures of self-reports of perceived impediments (Appendix J), ego-relevance (Appendix H), and check for the effectiveness of the experimental manipulation of performance certainty (Appendix I) in this study were the same measures as those described in Study 2. The measure of self-handicapping was limited to self-reports of performance disruption.

Debriefing Process

The same debriefing process described in Study 2 was used for this study.

Procedure

This study followed the procedures described in Study 2 with the following exceptions. First, participants aged 13 were enrolled in both public and private schools in Tasmania. Participants aged 10 were recruited through sports clubs. The lack of definite times for physical education in primary schools and the shortness of time devoted to physical education lessons was a prohibitive factor in accessing the 10-year-olds. Thus, sports clubs were accessed in the same manner as schools to provide a sample of 10-year-olds. Coaches were initially approached and given information regarding the study. After coaches consented to participate, members of the teams were met and informed of the study in the same manner as were the students in schools. Parental consent forms and information packages were used with revised wording to suit the sports club context.

Due to the relatively young age of some of the participants and the varying comprehension levels, individual items were read to participants when required during the responses to the questionnaires (Cardinal, Martin, & Sachs, 1996; Cardinal & Sachs, 1992; Ryska et al., 1999).

Design and Analysis

Several statistical analyses were used to meet the research aims of this study. Initially, multiple dichotomy and cross-tabulation analysis described differences in the reporting of impediments across gender groups and feedback contingency groups. Means, standard deviations, and confidence intervals were calculated to describe the two contingency groups. The main hypotheses centred on describing differences in the use of self-reported performance disruption between the two

age groups (10 & 13) and evaluative conditions (non-contingent failure & non-evaluative control). The validation to assess the effectiveness of the evaluative manipulation (ANCOVA) followed the same process discussed in Study 2. Tests of the linear model analysis assumptions for ANCOVA were all within the critical thresholds (Hair et al., 1995), thus no transformation of data was undertaken.

A two-way between-groups analysis of variance (ANOVA) tested the main effects of age groups, feedback contingencies, and their interaction. Specifically, the factorial design assessed differences in self-handicapping because of the interaction between age groups and evaluative conditions. The two independent variables were age groups 2(10 & 13) and evaluative conditions 2(*non-contingent failure* and *non-evaluative control*). Age was taken as whole age at the time of sample selection. Self-reported performance disruption scores served as the dependent variable. Test of the assumptions for ANOVA were carried out, with all results within the critical threshold scores (Hair et al., 1995), thus, no transformation of the dependent variable occurred.

A priori power was assessed on the results of Study 2, thus for a medium effect size ($f = .25$), each group needed at least 40 to 42 participants for a total number of 80 to achieve adequate power levels.

Results

Perceived Impediments to Performance

Participants cited an array of self-handicaps (Table 13). The utility of using a checklist revealed that participants, when free to select their own self-handicaps, cited multiple impediments. Additional impediments were cited by participants,

with these being broadly categorised into work related and too much sports training.

The statistics in the count column represented the total number of times the impediment was cited by participants. The statistics in the 10-year-old and 13-year-old columns represented the number of male and female respondents who nominated each of the impediments as a percentage of the total number of 10- and 13-year-old respondents. Impediments not selected by participants are not shown.

Table 13

Summary of Frequency of Reported Perceived Impediments to Performance

Self-handicap	Count	10	13
I've had too much homework	14	5.7	20.8
I have not trained	9	5.7	11.3
I've been tired	12	7.5	15.1
I had a sports injury	9	1.9	15.1
I've had family problems	10	1.9	17
I've had peer problems	8	3.8	11.3
I've had team problems	5	3.8	5.7
I've had personal problems	4	-	7.5
I've been in trouble at school	8	1.9	13.2
I've had late nights	5	3.8	5.7
I've had to work	10	3.8	15.1
I've not been motivated	13	3.8	20.8
I've played lots of sport	3	5.7	-

The results of the frequency analysis showed that a large portion of the sample ($n = 53$) cited numerous impediments to their performances ($N = 110$), with only 24 participants not reporting any impediment. Of the cited impediments, the most frequent related to too much homework and a lack of motivation.

A cross-tabulation analysis between age groups showed that the most frequently cited impediments for 13-year-olds related to a lack of motivation and having too much homework. For 10-year-olds the most frequently cited impediments related to concerns about being too tired followed by self-reports of having lots of sport, too much training, and too much homework'.

Validation of Performance Uncertainty

Means and standard deviations for perceptions of control for participants exposed to either feedback contingency condition are presented in Table 14.

Table 14

Descriptive Statistics for Perceptions of Control

Condition	<i>M</i>	<i>SD</i>
Pre Experimental Manipulation		
Control	3.76	.95
Non-contingent	3.84	1.0
Total	3.80	.97
Post Experimental Manipulation		
Control	3.84	.96
Non-contingent	2.18	1.08
Total	3.02	1.31

The predicted direction for the results was that participants exposed to the non-contingent failure condition would report lower perceptions of control for the parallel test than participants in the non-evaluative control condition. Before the first test, all participants reported having similar confidence in being able to control the test outcome: non-contingent failure ($M = 3.84$) and control ($M = 3.76$). After exposure to the feedback contingency, participants in the non-contingent failure group ($M = 2.18$) reported having lower perception of control for the second test than participants in the non-evaluative control group ($M = 3.84$).

The results of the ANCOVA are presented in Table 15. The result of a test of between-subjects effects for the main effect of feedback contingency condition was significant, indicating that when pre test perceptions of control were statistically controlled, differences existed between participants because of feedback contingency condition.

Table 15

ANCOVA for Perception of Control

Source	<i>df</i>	<i>F</i>	η^2	Power
Between Subjects				
FBC	1	60.40*	.44	1.0
Pre Control	1	12.59**	.14	.93
<i>S</i> within-group error	74	(.91)		

Note. FBC = Feedback Contingency Condition. Values enclosed in parentheses represent mean square errors. *S* = subjects.

* $p < .0001$, ** $p < .001$

Using η^2 as the measure of effect size, feedback contingency accounted for 56 per cent of the total variability in perception of control score.

Pairwise comparisons between the two conditions on the post experimental manipulation measure of control showed that participants in the non-contingent failure group differed significantly from participants in the non-evaluative group ($p = .0001$). Using Cohen's d for effect size, there was large effect size ($d = 1.5$) between the non-contingency failure group and the non-evaluative group, which is equal to 70 per cent non-overlap between mean scores.

It seems clear that the manipulation was successful in the expected direction. Using the effect size result, the mean score of participants exposed to non-contingent failure is equal to the 93rd percentile of the non-evaluative group. The results are supportive of the assumption that participants exposed to the deceptive performance scores experienced significantly less ability to control the outcome on the second test than did participants in the non-evaluative condition. Having established the experimental manipulation had the desired effect, the tests of the hypotheses proceeded.

A Test of the Effects of Age Group, Feedback Contingency, and their Interaction with Self-reported Performance Disruption

Descriptive results for each feedback contingency group are reported in Table 16. There was a noticeable trend that participants in the 10-year-old age group reported lower performance disruption scores ($M = 17.6$) than participants in the 13-year-old group ($M = 3.81$).

Table 16

Descriptive Statistics for Self-reported Disruption Scores

Age	<i>M</i>	<i>SD</i>	<u>95% Confidence Interval</u>	
			Lower	Upper
Non-evaluative Control				
10	1.21	.91	.76	1.65
13	8.85	6.93	5.58	12.11
Total	5.12	6.30		
Non-contingent Failure				
10	1.88	1.49	1.14	2.63
13	31.65	8.39	27.71	35.58
Total	17.55	16.24		

Note. 95% Confidence Interval for the Mean

Results of the ANOVA are reported in Table 17. The result for the main effect of feedback contingency group was significant, $F(1, 77) = 83.31$, $p = .0001$. Eta-squared as a measure of effect size showed that feedback contingency accounted for 53 per cent of the variance in self-reported performance disruption score. The difference in self-reported performance made by the two feedback contingency groups (collapsing across age groups) is not due to chance. The main effect for age group is significant $F(1, 77) = 211.53$, $p = .0001$.

Eta-squared as a measure of effect size showed that feedback contingency accounted for 74 per cent of the variance in self-reported performance disruption score. The difference in self-reported performance made by the age groups (collapsing across feedback contingency groups) is not due to chance.

Table 17

ANOVA for Self-reported Performance Disruption

Source	<i>df</i>	<i>F</i>	η^2	Power
Between subjects				
FBC	1	83.31*	.53	1.0
Age Group	1	211.41*	.74	1.0
FBC X Age Group	2	73.96*	.50	1.0
<i>S</i> within-group error	73	(31.78)		

Note. FBC = Feedback Contingency Condition. Values enclosed in parentheses represent mean square errors. *S* = subjects.

* $p < .0001$

The feedback contingency group by age group interaction is significant, $F(2, 77) = 73.96, p = .0001$. Eta-squared as a measure of effect size showed that interaction between age group and feedback contingency accounted for 50 per cent of the variance in self-reported performance disruption score. From the descriptive statistics, it can be seen that effect of feedback contingency group on performance disruption is dependent upon age group. To identify specific differences between age groups and feedback contingency groups, post hoc comparisons (Scheffé) with adjustments for multiple comparisons (Bonferroni) assessed the mean difference for each age group in each evaluative condition. Results are presented in Table 18.

Table 18

Summary of Post Hoc Comparisons for Self-reported Performance Disruption

Group	Group	Mean	95% Confidence Interval	
		Difference	Lower	Upper
10 ^a	10 ^b	-.67	- 5.98	4.62
	13 ^a	- 7.63*	-12.80	- 2.47
	13 ^b	-30.43*	-35.60	-25.27
13 ^a	13 ^b	-22.80*	-27.90	-17.69
	10 ^b	6.96*	1.71	12.02
13 ^b	10 ^b	29.76*	25.51	35.00

Note. ^a = Non-evaluative group. ^b = Non-contingent failure group

* $p < .05$

For 10-year-olds, there was no-significant difference between feedback contingency groups. In the non-contingent failure condition 10-year-olds did not report significantly higher levels of performance disruption than their counterparts in the non-evaluative condition. For 13-year-olds, those in the non-contingent failure condition reported significantly higher levels of performance disruption than their counterparts in the non-evaluative condition.

The results are consistent with the hypotheses that the reporting of performance disruption would vary because of the interaction between feedback contingency condition and age group. Specifically, older children (13) in the non-contingent failure condition reported more performance disruption than their counterparts in the non-evaluative control condition. This pattern of results was not repeated in the 10-year-old age group. The post hoc analysis revealed that when evaluative conditions were compared with age groups, for younger

children (10) there was no statistical significant difference in the reporting of performance disruption. For older children (13), participants in the non-evaluative condition reported statistically significantly higher levels of performance disruption than their counterparts in the non-evaluative condition.

Discussion

This study provided some support for the hypothesis that age is a factor in the onset of self-handicapping behaviour. Congruent with developmental theory (Elkind, 1984), and research from sport settings (e.g., Garcia, et al., 1983; Kimble, et al., 1998; Midgley, et al., 1996), the results from the present study demonstrate how in a physical skill context, age elicits different self-handicapping responses. Specifically, when young children aged 13 experienced non-contingent failure on a test of physical ability, they reported significantly higher levels of performance disruption than their counterparts in the non-evaluative condition. Contrastingly, young children aged 10 who experienced non-contingent failure did not report significantly higher levels of performance disruption than their counterparts in the non-evaluative condition.

The results are consistent with the notion that a level of cognitive maturity is related to the development of causal schemes (Boggiano & Main, 1986). In this study, all participants, regardless of feedback contingency condition and age group, reported that they had experienced a range of impediments in the previous week that would potentially harm their performances. The results from the frequency analysis showed that both age groups self-reported a number of different excuses before the parallel test. Moreover, the reporting of excuses occurred across feedback contingency conditions. This is supportive of the

concept that young children are naïvely aware of how excuses can obscure the link between performance outcome and ability.

Piaget's (1970) views on how differing levels of thinking are linked to developmental levels gives one possible explanation for the present results. Consistent with Piaget's views that young children (10 years of age) do not have a sufficient level of cognitive maturity to think in abstract form, young children in this study were not able to abstractly quantify how an excuse would detract from a future performance. Young children were able to self-report a number of different excuses that might have hindered their future performances, but they could not use them to self-handicap. This pattern is representative of the rudimentary use of excuses specifically, young children had the ability to know that excuses could serve as a mitigating factor but were not able to use the self-handicap in a realistic way. Consequently, when given the opportunity to self-handicap, young children in the evaluative condition did not self-handicap in a different manner than their counterparts in the non-evaluative condition.

Consistent with Piaget's (1970) views, young people (13 years of age) had the cognitive maturity to use a self-report of performance disruption as a self-handicap. Young people who experienced non-contingent failure on a first test of physical ability reported significantly higher levels of performance disruption than their counterparts in a non-evaluative setting. One possible interpretation for this pattern of result is that the young people had an ability to understand how a self-report could serve as a mitigating excuse for possible flawed performance.

There are several implications of the present findings. The result that a cognitive maturity is related to the sophisticated use of self-handicapping implies that the use of self-avowals of handicaps is a cognitive strategy that is available

only to older children. As a cognitive response, people who use self-handicaps must have the cognitive maturity to understand the causal schematics of performance outcomes. For example, they must understand how an audience will view others' performances and make attributions concerning the outcomes. To use a self-avowal, young people need to calculate what level of performance disruption is sufficient to cloud the link between ability and flawed performance. This is beset with difficulties. The intent of self-handicapping is not to sabotage performance. The level of performance disruption needs to be appropriate to be effective. For example, if too high, then the audience may suspect the ruse, and if too low, a level might not afford sufficient protection from flawed performance.

There are implications for teachers and coaches of sport and physical activity. If the use of self-reports of impediments as a self-handicapping strategy requires a certain level of cognitive sophistication, then young children may, in general, have limited means with which to self-handicap. The inability to use the more sophisticated self-avowal may potentially leave young children vulnerable when they face an evaluative threat in sport and physical education settings. Specifically, Nicholls (1978, 1984a, 1989, 1990) work suggests, there is a developmental trend in young people's abilities to differentiate between ability and effort. Consequently, some young people may not use effort withdrawal as a self-handicap because they believe that more effort equals more ability. In the present study, the frequency analysis of perceived impediments shows that young people are "streewise" to the fact that prior events can serve as potential excuses but are not fully conversant with the fully coping strategy of self-handicapping. The implication for young people using "the dog ate my homework" type self-handicap is that others may become suspicious of their repeated protestations and

their intent. In sport, the attachment of negative labels to young people's main form of self-handicapping could have catastrophic consequences on their development of perceptions of ability in sport. Moreover, young people continually confronted with failure situations may become "mentally exhausted" because of the effort required to think of new excuses.

There are possible alternative explanations for the present study's results. There is the possibility of methodological problems with the study. Given the age of the younger children in the study, they may not have fully comprehended the instructions concerning the reporting of performance disruption. In some instances, I had to explain in detail the intent of the written instructions to some younger children. Of course, there exists the possibility that the verbal instructions were not consistent with the written instructions and hence there was a degree of measurement error in the dependent variable.

Finally, the results in the present study only address the question of the onset of self-handicapping. The motivation to self-handicap most likely increases in the period of adolescence, not only because young people have the cognitive ability to use such strategies, but the period marks a transition from childhood to adulthood where young people are faced with a variety of challenges and expectations. Havighurst (1972) suggested that adolescents become increasingly aware of the impact of failure because they understand the link between mastery of developmental tasks and the adoption of adult masculine or feminine roles. Achievement on tasks related to sport plays an important part of males, and females lives. As early adolescents come to perceive an increasing pressure to succeed in sport because success has future implications, then failure becomes more aversive. This increasing pressure may lead students to become

particularly vulnerable to self-handicapping in physical achievement tasks such as sport, especially if the sporting environment is perceived as more performance-orientated rather than mastery-orientated. There exists the possibility of a relationship between self-handicapping and motivational orientations. For example, do children who are performance-orientated respond with differential levels of self-handicapping compared to children who are mastery-orientated? Research has not yet established a link between goal-orientation and self-handicapping in adolescent populations who are faced with evaluative threat.

In summary, the results of this investigation into the onset of self-handicapping showed that young children did use self-reports of impediments as mitigating excuses before a second test of physical ability. Nonetheless, the results showed that young people faced with evaluative threat were able to use self-handicaps above a rudimentary level. The results for young children showed no statistical significant difference in the reporting of performance disruption regardless of evaluative condition. The results for young people showed a statistical significance in self-reported performance disruption because of evaluative condition. One possible explanation for these results was the young children do engage in rudimentary forms of self-handicapping but do not have the cognitive sophistication to quantify the impact of the impediments on performance levels. Having determined that young children seem unlikely to be able to quantify the amount of disruption that impediments are likely to cause to their second attempts on a test of physical ability, the remaining studies were restricted to an adolescent population.

CHAPTER 6

Study 4: Goal-Orientation and Self-handicapping

Study 4 examined the relationship between adolescents' uses of self-handicapping in response to evaluative threat and their goal-orientations. The study represented the fourth research aim.

An assumption within self-handicapping theory is that individuals use self-handicaps when future ego-relevant outcomes threaten self-esteem (Greenberg, Pyszczynski, & Paisley, 1984). The social evaluative aspect of achievement contexts within the physical domain include situational factors such as types of performance standards, expectations present in the environment as well as uncertainty about performance. Intrapersonal factors include the types of causal attributions made by people for their performances and the manner in which they develop perceptions of personal competence. An area of research that encompasses these factors is goal perspective theory (Duda, 1992; Duda & Nicholls, 1992; Roberts, 1992). Moreover, goal perspective theory outlines the distinction between an emphasis on relative performance or the performance of others.

Overview of Goal Perspective Theory

Nicholls (1984a; 1989) argued that a major focus for individuals in achievement settings is to display high ability and avoid demonstrating low ability. Additionally, how individuals define success and failure can be identified through two goal orientations. The terms *task-orientated* and *ego-orientated* are reflective of the nomenclature used in the literature (Duda, 1992). Individuals categorised as task-orientated characteristically define competence in terms of

self-referenced standards of performance such as task mastery, fulfilment of one's potential, and skill improvement (Ames & Archer, 1988; Nicholls, 1992). Individuals defined as ego-orientated generally judge personal competence based on other referenced standards such as outperforming opponents and demonstrating superior ability (Jagacinski & Nicholls, 1987; Nicholls, 1989). According to Nicholls (1989), individuals are likely to be predisposed towards one or the other, or both of these goals.

Nicholls (1989) suggested that there are cognitive and affective correlates of goal orientation. These relationships are thought to exist due primarily to the different criteria employed to elicit feelings of success. Specifically, individuals with a task-orientation see success as a function of skill improvement, physical mastery, and exerting effort, whereas an ego-orientation is associated with the belief that high ability mainly determines success. An internal referencing of success is presumed to be more conducive to the maintenance of perceived competence, long-term activity engagement, and performance enhancement. Conversely, for persons with an ego-orientation, the goal in achievement situations is the beating or surpassing of others. Because other referenced comparative judgments underlie success, perceived ability is much more fragile when ego-involved. It is assumed that individuals who are categorised as ego-orientated and have perceptions of low ability and are more likely to drop out of physical activities and demonstrate less than optimal performance (Duda, 1989; Nicholls, 1984a, 1984b). For example, in the classroom, the adoption of ego-involving goals is associated with a withdrawal of effort, a disbelief in the utility of trying hard (Ames, 1984; Diener & Dweck, 1978) and impaired performance (Diener & Dweck, 1978; Elliott & Dweck, 1988). Kim and Gill (1997) aptly

summarised the body of literature that relates to the sport domain and achievement orientation. In their view, individuals' goal orientations influence their cognitions, emotions, and behaviour. Individuals, who are task-orientated are assumed to choose challenging tasks, exert maximum effort, experience intrinsic interest, and persist in the task, even in the face of difficulty.

Contrastingly, individuals who display an ego-orientation are expected to avoid challenging situations, exert minimum effort, and withdraw from sport following failure. For example, there is evidence that a task orientation is positively related to continued physical involvement (Duda, 1989), and a willingness to exert effort (Duda & Chi, 1989).

Furthermore, there is evidence of a relationship between goal perspective and attributional focus. In general, the literature indicates the ego-involvement is linked to an emphasis on ability attributions and the downplaying of the role of effort in performance, but task involvement corresponds to the employment of effort attributions (Duda, 1992). For example, individuals with a task-orientation tend to attribute their performance to effort (trying hard or not trying hard enough), but individuals described as ego-oriented tend to attribute their performance to innate ability or lack thereof (Ames, 1984; Diener & Dweck, 1978). Vlachopoulos and Biddle (1997) documented that for young people, task-orientation was positively associated with attributions that emphasised personal control, whereas ego-orientation had a negative association. That is, young people who had an ego-orientation causally attributed their failures to non-ability factors.

Given that goal perspectives reflect the manner in which individuals construe success and failure, and consequently, their attributions for success and failure,

there should be a relationship between goal orientation and self-handicapping. For example, it is logical to expect that individuals with an ego-orientation might use self-handicaps when they suspect failure is a possibility. Moreover, the types of handicaps that they would use would be related to non-ability factors such as events or impediments such as homework or sports injuries. Also, the use of self-handicaps would change the evaluative circumstance so that any outcome would not be linked to ability. Self-handicaps change the evaluative circumstances of a test by altering the diagnosticity of the information connected to performance outcomes (Self, 1990). Thus, when individuals face a situation where the outcomes relate to an assessment of ability, and flawed performance is anticipated, the presence of a self-handicap stops an accurate assessment of ability.

The diagnosticity of information about competence and its relatedness to self-handicapping is evident in the initial demonstration of the phenomena by Berglas and Jones (1978). The researchers contrasted two opposing assumptions about individuals' desires to learn about their competence. The first posited that individuals want information about their abilities. In contrast, the second assumption drew upon achievement motivation theory in that individuals may want diagnostic information, but the strength of the desire may vary depending upon their motivation to achieve. Berglas and Jones argued that the fear of failure might come to predominate over the desire for achievement and the desire for diagnostic information about the presence of abilities necessary for that achievement. This was their proposed dynamic underlying use of self-handicapping strategy; the motive to avoid unequivocal diagnostic information about a tenuous competence image.

There is a body of literature (Midgley et al., 1996; Midgley & Urdan, 1995; Ryska et al., 1999; Thill, 1993) that describes the relationship between goal orientations and self-handicapping. With one exception (Thill, 1993), the studies that examine the relationship between self-handicapping and goal orientation have not examined the relationship under experimental conditions.

Evidence for the Relationship between Goal Orientation and Self-handicapping

Thill (1993) provided evidence that goal orientation conformed to a pattern whereby adolescents who demonstrated ego-involvement based goals used self-handicaps in a different manner compared to adolescents who used task-orientated based goals. Participants were second and eighth grade students who were required to perform on a comprehension based test. Two conditions of goal involvement were created by having participants reference test scores against other participants' scores (*ego-involved*) or against levels of competence set by the participants themselves (*task-involved*). Participants then completed the test. Following the test, deceptive performance scores were used to separate participants into two evaluative conditions (*competently* or *incompetently*). Thereafter, participants rated their level of effort, completed a measure of their affect (pride, embarrassment, and guilt), and then gave the reasons why they applied little or great effort on the test. The measure of effort served as the dependent variable.

The results showed individuals in the ego-involvement condition and who believed that they failed (incompetent condition) self-handicapped by reporting that they applied significantly less effort on the test than participants in the task-involved condition. This pattern of results was not present for any other

combination. Thill (1993) suggested that students who adopt ego-involvement based goals are faced with enhanced threats to self-esteem when experiencing failure and hence are prone to self-handicap.

Despite the findings, there are some limitations for the evidence (Thill, 1993). The measure of self-handicapping was a retrospective self-report of reduced effort, whereas self-handicapping is an a priori strategy (Higgins, 1990). As there was no parallel test, it is unclear if the children were giving a post hoc excuse for failure on the test or giving a mitigating excuse for possible flawed performance on a subsequent evaluation. Also, the nature of the performance feedback manipulation was extreme and ambiguous. For example, the use of the terms incompetent and competent reflects performance outcomes at the extreme ends of the performance spectrum. As discussed in Chapter 2, the use of heavy deception has possible consequences for external validity. Moreover, the terms incompetent and competent are not consistent with the manner in which performance outcomes are expressed on intelligence tests. The students may have been confused by the terms, especially younger students who perhaps would not have the comprehension to understand the meaning of the terms.

Two studies (Midgley & Urdan, 1995; Midgley, et al., 1996) that involved adolescent populations outline similar findings for the relationship between goal orientation and self-handicapping. Midgley and Urdan (1995) had participants complete a series of self-report inventories to assess the contribution of a number of variables in the prediction of self-handicapping. They used the variables of gender (*male* and *female*), academic achievement (*grade point average*), achievement goal type (*task* and *ego*), achievement climate (*performance* and *task*), various self-perception measures (self-efficacy, self-consciousness, and

self-worth) and social variables (negative friend orientation, positive friend orientation, and adult approval seeking) to predict self-handicapping. The measure of self-handicapping involved participants indicating which of several handicap types they would potentially use when completing an academic test. The authors reported that the measure of the dependent variable was on a continuous scale, but they did not document the method of calculation.

The results (Midgley & Urdan, 1995) showed that ego-orientation was positively associated with self-handicapping when combined with gender and a measure of grade point average. Midgley and Urdan interpreted the result, as an indication that students who set ego-orientated goals, experienced poor performance at school, and displayed negative attitudes towards academic performance, perceived that self-handicapping was a legitimate strategy when faced with possible failure. There are some caveats to the findings. The protocol contained no experimental manipulation of performance certainty, thus it is unclear under what evaluative conditions there is a relationship between goal orientation and self-handicapping. It would be reasonable to expect that different goal orientations might have different relationships under different sources of evaluative threat. For example, evaluative threat stemming from failure might alter the relationship between ego-orientated and self-handicapping compared to success. Also, there was no ego-relevance measure of the domain. A key tenet of self-handicapping is that individuals use self-handicaps only when outcomes have high ego-relevance. The implication is that some students may not have self-handicapped because evaluative outcomes posed threat.

The measurement of the dependent variable in the study was inconsistent with the accepted definitions of self-handicapping because it was retrospective.

Participants reported on their previous uses of self-handicapping strategies. The stem of the question used to measure self-handicapping asked students to speculate whether a list of handicaps were appropriate strategies. The wording did not require students to indicate if they had used any of the listed self-handicaps. Therefore, it is possible that the measure of self-handicapping reflected the appropriateness of post hoc attributions rather than actual self-handicapping behaviour.

Finally, the list of handicaps contained items that were clearly post hoc rather than anticipatory. For example, one item asked students how true it was that student's make excuses after failure. This wording of the item clearly outlined a post hoc strategy for failure rather than anticipatory strategy for possible failure. So measures of the dependent variable may have representative excuse-making behaviour rather than self-handicapping.

Midgley et al. (1996) used the same protocol in a second study, but removed the post hoc excuses from the checklist. The measure of self-handicapping was achieved by having participants respond to each self-handicap item by indicating if they would use the handicap. Anchors were set at 1 (*not true of me*) to 5 (*very true of me*) for each handicap. Using a non-random sample of students, the authors used the variables of race (*African American* and *European American*), attitude (*negative* and *positive*), goal orientation (*task* and *ego*), self-esteem (*low* and *high*), self-depreciation, education achievement (*grade point average*), and socio-economic status (*level of parental education*) to predict self-handicapping. The results showed that the variables of ego-orientation and race interacted in a significant and positive relationship with self-handicapping. Specifically, African

American students who were ego-orientated were more prone to use self-handicaps. There was no replication of the result for European American students.

Similar possible shortcomings of Midgley and Urdan (1995) study are also evident in the Midgley et al. (1996) study. This study used a speculative measure rather than an actual measure of self-handicapping. Students responded to the stem "When you have experienced failure which of the following strategies have you used in the past?" Possibly students' responses may have reflected post hoc excuse-making behaviour rather than a priori excuses for anticipated flawed performances. The generally agreed definition of self-handicaps is that they are impediments to potential failure rather than previous failure. It would be plausible that adolescents, given the chance to explain a previous failure, would do so. Also, there was no measure of ego-relevance of the domain. Students responded by indicating which self-handicapping strategies were appropriate when they had experienced failures on academic tests, but there was no assessment of whether the previous failures applied to tests that were highly ego-relevant. Thus, students may have been responding to how they may have acted when experiencing failures in achievement contexts that lacked importance.

There is a sparsity of past research (Ryska et al., 1999) that describes the relationship between achievement orientation and self-handicapping for the physical domain. Ryska et al. employed a non-experimental design to describe the relationships among goal orientation, individual differences in trait excuse-making, trait effort-expended, perceived motivational climate, and the use of self-reported performance disruption as a self-handicapping strategy in young soccer players aged between 10 and 17. The two trait measures of excuse-making and effort-expended were derived from the Self-Handicapping Scale (Jones &

Rhodewalt, 1982). Participants completed all self-report inventories before the start of a season and then completed the measure of self-handicapping before a game in the regular competitive season. Self-handicapping was defined as a self-estimate of performance disruption. Participants responded to a checklist of impediments or events (e.g. sports injury, too much homework) before an upcoming performance. Then, for each cited impediment, participants estimated the level of disruption that each impediment would cause to their sports performance. Level of disruption had anchors at 1 (*minimally disruptive*) to 6 (*completely disruptive*). All disruption scores were summed and divided by the number of cited impediments to obtain a single measure of performance disruption. Participants were free to cite more than one impediment. Participants completed all measures at pre-season meetings. Measures of the dependent variable occurred before actual games.

Pertinent results for the present discussion showed that the variables of team climate, dispositional goal orientation, and trait excuse-making were positive and significant predictors of self-handicapping. That is, young people who had an ego-orientation and were prone to use excuses, self-handicapped when the team climate was performance orientated. Ryska et al. (1999) interpreted their results as support for the assumption that people who are have a disposition to using excuses as self-handicaps and who tend to judge personal competence based on references to standards are more prone to self-handicap.

The results underscored the notion that individuals' motivational goals are important variables in the use of self-handicapping. Specifically, individuals who have an ego-orientation when forming perceptions of personal success and participate in a team that emphasises norm based comparisons are most likely to

engage in the use of self-handicaps. Nonetheless, there are shortcomings to the evidence. The study contained no experimental manipulation of performance certainty. Performance uncertainty was speculated to have existed because participants rated the upcoming games as highly important. Also, there was no measure of ego-relevance of the domain.

Review of Evidence for Goal-Orientation as an Individual Difference Variable in Self-Handicapping

The literature (Midgley et al., 1996; Midgley & Urdan, 1995; Ryska et al., 1999; Thill, 1993) suggests a relationship between goal orientation and self-handicapping, but there are some caveats. The relationship is unknown when failure is the antecedent of performance uncertainty. Only one study (Thill, 1993) experimentally manipulated perception of certainty but the extreme nature of the manipulation raised some concern for external validity. Also, there is a lack of evidence for the relationship between the goal orientation and self-handicapping for young people. Evidence from two studies (Midgley et al., 1996; Midgley & Urdan, 1995) suggests a relationship for ego-orientation and self-handicapping but methodological concerns related to the measurement of self-handicapping limit the applicability of the findings. Specifically, the measure in both studies reflected more post hoc excuses rather than a priori excuses. Moreover, the measure reflected speculative use rather than actual use of self-handicaps. One study related to the physical domain (Ryska et al., 1999) indicated a similar pattern, but showed that variable of trait self-handicapping, in particular a disposition to using excuses as self-handicaps might interact with goal orientation to predict self-handicapping. Nonetheless, the study was non-experimental because there was no manipulation of performance certainty. Thus,

it is unclear as to the relationship between goal orientations and self-handicapping for the physical domain when evaluative threat stems from failure.

In summary, there is an anticipated relationship for goal orientation and self-handicapping, but there is scant evidence for the physical domain under experimental conditions. The investigation explored the relationship between goal orientations and self-handicapping under experimental conditions. Specifically, the aim of the study was to explore the relationship for young people faced with evaluative threat caused by non-contingent failure performance scores on a test of physical skill. The present study used the variables of goal orientation, trait excuse-making, trait effort-expended, and gender to investigate their relationships with the self-handicap type of self-reports of performance disruption. Individuals were randomly selected into the study based on their responses to a measure of ego-relevance of the physical domain. The sham test of physical ability and its associated normative data was used to create evaluative threat by indicating failure on a first test. Performance feedback was given in a manner that reflected non-contingency, with no feedback other than percentiles and the deceptive score given to participants in the evaluative group. A non-evaluative condition was included so that an assessment of the contribution of non-contingent failure could be made.

Research Aims for Study 4

The review of literature showed an anticipated relationship between goal orientation and self-handicapping. Specifically, ego-orientation should share a positive relationship with self-handicapping strategy. Nonetheless, there is evidence that the index of trait excuse-making may also contribute to the explained variance in self-handicapping. What is not known is the relationship

for the antecedent condition of non-contingent failure. Given this, the nature of the research aims in this investigation was exploratory in their nature. The following objective for the analysis was as follows:

- (a) To identify the aggregate impact of the independent variables on the dependent variable of self-reported performance disruption.

Method

Participants

The participants were students ($N = 160$, $n = 80$ males, $n = 80$ females) participating in organised sports programmes in Tasmania. All participants were English speaking. The sample was randomly selected using the procedures outlined in Study 2. The age groups 13 to 17 were selected as the sample group. The sample consisted of equal numbers of males and females ($n = 16$) in each age group.

Measures and Instruments

Sham Physical Skill Test

All participants completed the sham physical skill test as used in Study 2.

Feedback Contingencies

The same operational definition for evaluative threat established in Study 3 served for this study.

Inventories

The measures of self-reports of perceived impediments (Appendix J), ego-relevance (Appendix H), and check for the effectiveness of the experimental manipulation of performance certainty (Appendix I) in this study were the same measures as those described in Study 3. Participant initiated impediments cited in Study 2 were added to the measure of perceived impediments this study.

Additional inventories for this study included the following.

Measure of Trait Excuse-making and Trait Effort-expended

The two indices, trait excuse-making and trait effort-expended were derived from the Self-Handicapping Scale (Jones & Rhodewalt, 1982). The Self-Handicapping Scale (SHS) contains 14 items presented on a 6-point scale with anchors at 0 (*disagree very much*) to 5 (*agree very much*) (Appendix O). The *trait excuse-making* scale reflects the proclivity to use self-handicaps that are similar to excuses. The excuse-making subscale is derived from nine items of the SHS and reflects an individuals proclivity to use impediments that could negatively affect performance. The *trait effort-expended* measure is derived from the remaining five items of the SHS and reflects the tendency to express concern about levels of effort or motivation in the preparation for performance. Higher scores on both indices represent an increased proclivity to use self-handicapping. Rhodewalt (1990) reported that the two indices have acceptable validity and reliability.

Dispositional Goal Orientation

To measure dispositional goal orientation, the participants completed the Task and Ego Orientation in Sport Questionnaire (Duda & Nicholls, 1992). The

Task and Ego Orientation in Sport Questionnaire (TEOSQ) inventory (Appendix P) is reported to measure individual differences in achievement goal orientation on two scales: task- and ego-orientation. The scale contains 13 items with each item scored on a continuous scale with anchors at 1 and 5. Specifically, seven items reflect task-orientation and the other six items reflect ego-orientation to sport success. With reference to Boyd and Callahan (1994), the instrument was modified for young people so that each item contained a description for each numerical measure. The response alternatives were: never, not usually, sometimes, usually, and always. These terms were displayed under their corresponding score (ranging from 1 to 5). Participants were asked to respond to the TEOSQ items by thinking about how they felt when they were most successful in their sport. High reliability and validity data are reported in the literature for the TEOSQ scale (Chi & Duda, 1995; Duda, Oleson, & Templin, 1991).

Debriefing process

The same debriefing process as established in Study 2 was used for this study.

Procedure

This study followed the identical procedures to those established in Study 3, except for the following. Participants were selected from a variety of organised sports programmes because of the difficulty in accessing schools. Of the total sample ($N = 243$) who consented to participate in the study, 5 students were excluded because of low ego-relevance scores. A random sample was selected from the remaining participants but there were low response numbers for females

in age groups 14 ($n = 20$), 15 ($n = 22$), and 16 ($n = 21$). Inventories for goal orientation and the two subscales of excuse-making and effort-expended were completed in large group meetings before the completion of the sham test.

Design and Analysis

Several statistical procedures were used to meet the research aims. Initially, all analyses were the same as those described for Study 3. Additional analyses for internal consistency (Cronbach, 1957) examined the internal consistency for the self-report inventories for goal orientation and the two subscales of excuse-making and effort-expended. To assess the success of the feedback manipulation an analysis of covariance (ANCOVA) assessed differences in participants' perceptions of control across the feedback contingency conditions. All data for the measure of perception of control were assessed to ensure that the assumptions for ANCOVA were met. All results were within the critical thresholds (Hair et al., 1995). No data was transformed.

As the overall aim of the study was to identify the relationship between multiple independent variables and the self-handicap of performance disruption, I decided to change the research design from a between-groups design to a regression design. The decision was predicated on several factors, but most important was the argument forwarded by several authors (Cohen & Cohen, 1983; Maxwell & Delaney, 1993) that the dichotomisation of continuous variables into high and low groups has several disadvantages compared to regression. Also, as the independent variables of interest in the present study and some in the studies that follow in this thesis were scored on continuous scales, a change to a regression design seemed to be prudent to avoid any results being

subjected to the same possible shortcomings as previous research. For example, Maxwell and Delaney have criticised research findings where groups have been formed based on the dichotomisation of continuous variables.

For this study, standard regression was chosen as the statistical technique to meet the aims of the study because it analyses the relationship between a dependent variable and a set of independent variables where the exact nature of the relationship is unknown. As a statistical tool, it is frequently used to find the best prediction equation for a set of variables, to control for confounding factors to evaluate the contribution of a specific set of variables, and to find structural relationships (Ho, 2000). Acceptance of regression results is contingent upon a number of factors, some of which include test of linearity, homoscedasticity, independence of error terms, normality, and multicollinearity and singularity. It is suggested that tests of the assumptions for regression be completed with all variables entered into a single regression analysis before determining a final model (Hair et al., 1995; Ho, 2000).

A standard regression using the independent variables of feedback contingency, ego-orientation, task-orientation, trait effort-expended, trait excuse-making, and gender was run to allow assessment of the assumptions for regression analysis. All data met the assumptions for regression, with all results within specified critical threshold levels (Hair et al., 1995). Given that the relationship between the independent variables and the dependent variable was unknown, a medium relationship was factored into the regression equation. A priori power estimates indicated that five independent variables with a sample size of 160 would detect R^2 values between 16 to 8 per cent at an alpha level of .01 (Cohen & Cohen, 1983). In terms of generalisability of the sample size,

recommended ratios are 20 to 50 observations for each independent variable (Hair et al., 1995). Given the above factors, the calculated sample size ($N = 160$) met the requirements of regression analysis. All analyses were performed with SPSS (1999).

Results

Perceived Impediments to Performance

Participants in the study cited an array of impediments. In Table 19, the statistics for males and females in the count column represent the frequencies for all impediments that were nominated by participants. Impediments that were not selected were excluded from the reporting of results. Statistics in the total percentage column represent the number of respondents who indicated that they had experienced the impediment as a percentage of the total valid sample ($n = 118$). One individual cited an alternative to the listed impediments (death in the family). Unsurprisingly, students cited more than one impediment before the subsequent test. This pattern replicated findings from the previous studies in this thesis and in other research. Overall, young people self-reported that sports injuries, lots of sport, late nights, and other commitments were potential excuses for flawed performance.

The results of the cross-tabulation analysis of impediments showed that “sports injuries” was the most frequently cited handicap for males ($n = 21$) and females ($n = 22$). For males, the next most frequently cited impediments were “lots of sport” ($n = 20$), “other commitments” ($n = 19$) and “homework” ($n = 15$). For females, the impediments of “family problems” ($n = 17$), “peer problems” ($n = 16$), and “lots of sport” ($n = 15$) were also frequently cited.

Table 19

Summary of Two-Way Table for Gender for Reported Perceived Impediments to Performance

	Total	Females	Males
Self-handicap	Percentage	Count	Count
I've had too much homework	23.7	13	15
I've not trained	17.8	7	14
I've had other commitments	27.1	13	19
I've played lots of sport	29.7	15	20
I've had family problems	22.9	17	10
I've had peer problems	23.7	16	12
I've had team/sport problems	19.5	10	13
I've had personal problems	14.4	7	10
I've had teacher problems	16.1	8	11
I've had late nights	23.7	15	13
I've had work commitments	20.3	14	10
I've had a sports injury	36.4	22	21

The results of a cross-tabulation of the frequency counts between participants in the non-contingent failure condition and those in the non-evaluative condition are reported in Table 20.

Table 20

Summary of Two-Way Table for Evaluative Conditions for Perceived Impediments to Performance

	NEC	NCF
Self-handicap	Count	Count
I've had too much homework	14	14
I've not trained	12	9
I've had other commitments	14	18
I've played lots of sport	18	17
I've had family problems	11	16
I've had peer problems	6	22
I've had team/sport problems	10	13
I've had personal problems	7	10
I've had teacher problems	7	12
I've had late nights	11	17
I've had work commitments	10	14
I've had a sports injury	18	25

Note. NEC = non-evaluative control condition, NCF = non-contingent failure condition

Impediments not included in the Table 20 because of the low response rates ($n = 1$) are references to the weather (it's been too hot, it's been too cold), other needs (I've had other things to do), and (I've been in trouble). The statistics for the non-contingent failure group and non-evaluative group in the count column represent the frequencies for all impediments that were nominated by participants. The two-way table results showed that participants in both feedback

groups cited similar numbers of impediments. Participants in the non-contingent failure condition reported slightly more impediments (51.7%) than did participants in the non-evaluative control (48.3%). Noteworthy is the similarity for both feedback groups in the reporting of “sports injuries”, “lots of sport”, and “too much homework” as impediments.

Validation of Performance Uncertainty

Means and standard deviations for perceptions of control for each feedback contingency group are presented in Table 21 for the two trials.

Table 21

Descriptive Statistics for Perceptions

Group	<i>M</i>	<i>SD</i>
Pre experimental Manipulation		
Non-contingent	3.98	.87
Control	3.87	.94
Total	3.93	.91
Post Experimental Manipulation		
Non-contingent	1.96	.84
Control	3.71	.94
Total	2.83	1.25

It was predicted that participants in the non-contingent failure condition would report lower perceptions of control for the parallel test than participants in the non-evaluative control condition because of the feedback manipulation.

Before the first test, all participants reported having similar confidence at being

able to control the test outcome, non-contingent failure ($M = 3.98$) and control ($M = 3.87$). After exposure to the feedback contingency, participants in the non-contingent failure group ($M = 1.96$) reported having lower perceptions of control for the second test than participants in the non-evaluative control group ($M = 3.71$).

The results of the ANCOVA are presented in Table 22. The result of a test of between-subjects effects for the main effect of feedback contingency group was significant indicating that when pre-test perceptions of control were statistically controlled, participants differed on the perception of control measure because of feedback contingency conditions. Using η^2 as the measure of effect size, feedback contingency group accounted for 56 per cent of the total variability in perception of control score.

Table 22

Summary of ANCOVA Results for Perception of Control

Source	<i>df</i>	<i>F</i>	η^2	Power
Between Subjects				
FBC	1	207.49	.56	1.0
Pre Control	1	46.87	.23	1.0
<i>S</i> within-group error	157	(.62)		

Note. FBC = Feedback Contingency Condition. Values enclosed in parentheses represent mean square errors. *S* = subjects.

Pairwise comparisons between the two groups on the post control measure showed that participants in the non-contingent failure group differed significantly from participants in the non-evaluative group ($p = .0001$). Using Cohen's d for effect size, there was large effect size ($d = 1.8$) between the non-contingency

failure group and the non-evaluative group, which is equal to 77 per cent non-overlap between mean scores.

It seems clear that the manipulation was successful in the expected direction. The mean score of the non-contingent failure group indicates that it is equal to the 96th percentile for the non-evaluative group. The results are supportive of the assumption that participants exposed to the feedback contingency experienced significantly more uncertainty about their performances on the second test than did participants in the non-evaluative condition. Having established that the experimental manipulation had the desired effect on participants' perceptions of performance certainty, the tests of the hypotheses proceeded.

The Variables of Goal Orientation, Trait Excuse-making, Trait Effort-expended, and Gender in the Prediction of Self-reported Performance Disruption

Descriptive information for all independent measures is presented in Table 23. All measures were on continuous scales except for the variables of feedback contingency condition and gender. These variables were categorical and were dummy coded (0 = *non-evaluative control*, 1 = *non-contingent failure*) and (1 = *male*, 2 = *female*) respectively.

Internal consistency estimates indicated a range of estimates for each of the inventories. The result of internal correlational analysis for trait excuse-making was low, ($\alpha = .44$), similarly for trait effort-expended ($\alpha = .50$). Internal correlational estimates for the two goal orientation subscales were high. Specifically, for the ego-orientation measure, the estimate was high ($\alpha = .89$), as was the estimate for task-orientation ($\alpha = .82$). The results for two trait self-handicapping subscales were problematic for the regression analysis in terms of

interpreting the regression coefficients. Nonetheless, I decided to include the two measures to determine their impact in the model.

Table 23

Summary of Descriptive Statistics for all Variables used in the Regression Analysis

Variables	<i>M</i>	<i>SD</i>	95% CI		Skewness	Kurtosis
			Lower	Upper		
1. TEE	13.48	3.67	12.90	14.05	.10	.26
2. TEM	22.79	4.42	22.09	23.48	.66	.56
3. EO	15.97	4.72	15.23	16.71	.53	-.84
4. TO	25.65	2.97	25.19	26.12	-.47	-.29

Note. 95% CI = 95 per cent Confidence Intervals for the Mean

TEE = Trait Effort-expended, TEM = Trait Excuse-making,

EO = Ego-orientation, TO = Task-orientation

Regression Estimates for Feedback Contingency, Ego-orientation, Task-orientation, Trait Excuse-making, Trait Effort-expended, and Gender

A standard regression analysis estimated the relationship between the independent variables of feedback contingency condition, ego-orientation, task-orientation, trait excuse-making, trait effort-expended, and gender and self-reported performance disruption as the dependent variable. Results are revealed in Table 24.

Table 24

Summary of Standard Analysis for Variables Predicting of Self-reported Performance Disruption (N = 160)

Model	<i>B</i>	<i>SE B</i>	β
Constant	4.56	13.76	
1. Feedback Contingency	25.16	2.37	.65*
2. Ego-orientation	.57	.26	.14**
3. Task-orientation	-.44	.42	-.06
4. Trait Excuse-making	.002	.27	.007
5. Trait Effort-expended	.11	.30	.02
6. Gender	2.69	2.39	.05

Note. $R^2 = .43$; $\Delta R^2 = .40$ ($p < .05$)

* $p < .0001$, ** $p = .02$

The result for the model with all variables included was significant, $F_{inc}(6,153) = 19,28$, $p < .0001$, and explained 40 per cent of adjusted R^2 in self-reported performance disruption. Results for semi-partial correlations indicated that feedback contingency condition accounted for 65 per cent of the variation in performance disruption and the variable of ego-orientation accounted for 17 per cent. Task-orientation accounted for 8 per cent. For the model, the β weight result for feedback contingency was the most important predictor. The beta weight (β) for the variable of ego-orientation indicated that it had the next strongest relationship with self-reported performance disruption. The direction of the coefficient was positive, indicating that the more participants focused on

other reference standards when forming perceptions of personal success, the greater the association with self-reported performance disruption whereas; the less a focus on other reference standards when forming perceptions of success, the weaker the association with self-reported performance disruption. For task-orientation, the beta weight (β) was negative and semi-partial correlations indicated that the variable accounted for 8 per cent of the variance in performance disruption but it was not a significant predictor of performance disruption, ($t(156) = -1.05, p = .29$). The 95 per cent confidence intervals for the beta coefficients for feedback contingency condition and ego-orientation indicated that they did not contain zero, but for the remaining variables zero did fall between the upper and lower limits confirming their non-significance.

The result of the first model showed that the two variables of feedback contingency and ego-orientation were important and significant predictors of performance disruption. The variable of task-orientation did not contribute significantly to the variance in performance disruption. The two subscales of trait self-handicapping were not significant contributors to the explained variance in self-reported performance disruption. Similarly, the variable of gender was not a statistically significant contributor to the explained variance of self-reported performance disruption.

Given that the addition of the individual difference variables of trait self-handicapping, trait excuse-making, trait effort-expended, and gender did not reliably improve R^2 , an interpretation of the equation is best illustrated using a model that is trimmed of non-significant variables (Hair et al., 1995). With feedback contingency condition and ego-orientation entered into the model, the

two explained 41 per cent (adjust R^2) of the variance in self-reported performance disruption.

Since those participants with a value of 1 for feedback contingency condition were in the non-contingent failure group, the B coefficient (25.16) represents a change in predicted self-reported performance disruption over that of the constant (4.56), which is equal to the mean performance disruption score for participants in the non-evaluative condition. Adding the B coefficient to the constant gives the mean for self-reported performance disruption for participants in the non-contingent failure condition (29.72). The results showed participants who believed that they had failed on a first test of physical ability reported that the impediments that they had experienced in the previous 24 hours reduced their capacity to perform on a second test by approximately 30 per cent, whereas participants in the non-evaluative condition reported performance disruption at approximately 5 per cent.

Therefore, a failure experience for participants caused them to imply that their capacity to perform would be reduced over one third. The positive beta weight score (β) for the variable of ego-orientation indicated that higher scores were associated with higher performance disruption scores. The interpretation of the regression equation indicated that participants (both males and females) who experienced non-contingent failure and who largely disregard self-improvement and skill mastery information when forming perceptions of personal success are those individuals most likely to engage in the use of self-reports of performance disruption as a self-handicap before an upcoming evaluation of their physical ability.

The unstandardised coefficients (B) for feedback contingency and ego-orientation and the 95 per cent confidence limits for the mean of ego-orientation give an illustration of the regression equation. For the non-contingent failure group, a score equal to the upper limit for the ego-orientation scores would translate to a performance disruption score of 34 per cent, whereas in the non-evaluative control condition, a score equal to the upper limit on ego-orientation scores would translate to a performance disruption score of 14 per cent. Contrastingly, for the non-contingent feedback group with a score equal to the lower limit for the ego-orientation, a predicted score for performance disruption score would be 33 per cent, whereas a score equal to the lower limit for ego-orientation would translate to a performance disruption score of 13 per cent.

Discussion

The aim of Study 4 was to assess the impact of feedback contingency group, ego-orientation, task-orientation, trait excuse-making, trait effort-expended, and gender on the variable of self-reported performance disruption. The variables of feedback contingency group and ego-orientation were significant and important predictors of self-handicapping.

Self-reports of Impediments

The results of the frequency analyses of impediments indicated a similar pattern to those reported in the previous studies of this thesis. Popular excuses before a parallel test of physical skill were the claims of "...sports injury" and "...lots of sport". The implication of citing too much sport suggests a strategy not of effort withdrawal but of too much training or sport. This is similar to the strategy referred to as *over-achievement* (Thompson, 1999). Individuals use the

strategy of over training to imply that any failure that might occur is not due to a lack of effort or ability because all possible efforts have been made to ensure success (Thompson, 1999).

There is a consistent pattern across studies thus far in the thesis of young people reporting multiple impediments. In addition to the previous discussion regarding this trend, another possible explanation for the pattern is that young people are replicating a behaviour that is acceptable in the sport situation. Often reported in the media and heard before competition are sports-persons giving a priori excuses for possible flawed performances. It is not surprising that as the young people in this study are involved in sport competitions, they would replicate the verbal manoeuvrings of older athletes. The verbal manoeuvrings of athletes before a contest is sometimes labelled as “hedging one’s bets”. Hedging one’s bets is a term that defines a situation where individuals may be confident of success, but rather than accept the label of favourite, verbally downplay their chances of success by implying that their opponents are more likely to win or that circumstances diminish their favouritism. This strategy is commonly termed in Australian sports culture as claiming the “underdog” status. The American sports culture term “sandbagging” is perhaps the equivalent. There are several advantages gained by engaging in hedging one’s bets or sandbagging.

Hedging one’s bets, regardless of the evaluative threat presented by a situation, may allow young athletes to offset any concerns over and above anxiety about successful performance. For example, young athletes in the present study may have felt concerns because of the novelty of the test situation. So regardless of whether they were being evaluated or not, the novelty factor may have caused some young people to experience a degree of anxiety. Arkin and

Bamgardner (1985) suggested that individuals when faced with uncertainty about performance outcomes in a short time frame (i.e., one off failures) would use garden variety type self-handicaps. It is the possibility that the garden-variety type handicap that Arkin and Bamgardner spoke of is the equivalent of hedging ones bets.

Goal Orientation and Self-handicapping

As far as the relationship between the independent variables and self-handicapping is concerned, ego-orientation and non-contingent failure were the only statistically significant variables that combined to predict self-handicapping. The variables of task-orientation, trait excuse-making, trait effort-expended, and gender did not add to the explained variance in self-handicapping over and above that explained by feedback contingency and ego-orientation.

Goal theory (Duda, 1992; Duda & Nicholls, 1992; Roberts, 1992) posits that individuals who construe success from other reference standards are prone to attribute non-ability factors as causes of failure. Ego-orientation is associated with self-defence strategies such as withdrawal, avoidance of challenging tasks, and the exertion of minimal effort. Elliot and Dweck (1988) highlighted that when the value of an ego goal was highlighted, children who believed they lacked ability responded to feedback in a "learned helpless" manner. Similar conditions existed for the present study. Young peoples' performance scores were compared to others to indicate failure on an evaluative test of physical ability. Young people who had an orientation to construe success based on the standards of others, engaged in self-handicapping before a subsequent test by self-avowing that factors other than ability would negatively impact on their

upcoming performances. The types of impediments reported by young people related to non-ability factors, or factors outside of their control. This is consistent with past research that suggests an association between ego-orientation and the ascribing of causes of failure to non-ability or innate factors.

The results from this study provide an extension to what is known about the behaviour outcomes of different goal orientations. In general, the results give an indication that young people who construe success based on other reference standards have a tendency to self-handicap before evaluative situations when they experienced previous failure. Moreover, the result that self-reports were the means of self-handicapping give added insight into the behaviour of young people who have an ego-orientation. There is an association between ego-orientation and self-avowals. This connection is hardly surprising because individuals who are ego-orientated ascribe failure to innate or non-ability factors. In this study, the types of impediments offered and the definition of performance disruption allowed young people to attribute possible flawed performance to factors other than their ability.

The result of this study has implications for coaches and teachers. Typically, sport contexts such as health and physical education classes and organised sport contain situations involving comparisons of abilities and outcomes against others. A common aim of sport and health and physical education is to maintain participation: nonetheless, there is a trend towards more performance-orientated climates, which emphasise ego-goal climates. For example, selection into teams requires the meeting of some performance standard. In health and physical education there is a trend to compare health measures against standardised percentiles. For example, students in health based classes often compare their

results on various measures (i.e., body mass index, aerobic fitness) to set percentiles.

For young people who have a disposition to use other references as a means of determining success, an unexplained failure to meet the success standard causes them to experience uncertainty and hence engage in self-handicapping. The consequences of such a situation are unlimited. For example, in a sport context, the continuation of unexplained failure might lead to more extreme self-handicapping behaviour such as effort withdrawal. In health and physical education classes, unexplained failure might lead to young people avoiding assessing their health in future years because they fear another failure. The initial self-handicap may present young people with a first line of defence and in single bouts be beneficial. But coaches and teachers should be alert to the use of self-handicaps because the self-handicap may signal that the teaching situation presents some evaluative threat to the young people.

With regard to the relationship between task-orientation and self-handicapping, the results of this study mirror those of previous research. That is, an emphasis on task involvement that entails an internal referencing of perceptions of ability and a focus on improving and skill attainment is not associated with self-handicapping. According to Nicholls (1989), task-orientation is associated with persistence in the face of difficulty and exertion of maximum effort. Individuals who are task-orientated, value personal improvement over demonstration of ability and feel that they have achieved their personal best when they give optimal effort, even if they do not perform better than the average. The relationship between task-orientation and self-handicapping in the present study lends support to the aforementioned description of task-orientation.

With respect to the variables of trait excuse-making and trait effort-expended (Jones & Rhodewalt, 1982), the results indicate that they did not share an important relationship with self-handicapping. The present study's results are not in accordance with those reported in the literature. Ryska et al. (1999) reported that trait excuse-making combined with ego-orientation to predict self-handicapping. A possible explanation for the result may lie with the low reliability estimates for the two subscales and the two indices. Findings of an association with self-handicapping would have been questionable given the low reliability results for the two subscales. The reliability estimates are lower than previously reported but they represent the first results for young people under experimental conditions.

In regards to the relationship between gender and self-handicapping, the result in this study is consistent with the literature. It appears that there is no difference between males and females in the use of self-reports as a self-handicapping strategy when performance uncertainty is associated with failure.

In summary, the results of this study present the first evidence that young people involved in an evaluative test of physical ability self-handicap when they have an ego-orientation. Greenier et al. (1995) linked an ego-orientation to self-esteem, arguing that individuals who use other reference standards as a basis for determining their competences would be prone to be more uncertain about their estimations of self-esteem. An assumption in self-handicapping theory is that individuals use self-handicaps because they perceive threats to important, self-relevant dimensions (Arkin & Baumgardner, 1985; Berglas & Jones, 1978; Harris & Snyder, 1986; Jones & Berglas, 1978; Snyder, 1990; Snyder & Smith, 1982; Snyder et al., 1985). Therefore, differences in self-esteem should affect the

tendency to self-handicap. To date, this assumption has not been validated for young people engaged in achievement tasks associated with the physical domain. What follows next is a report of an investigation into the relationship between self-esteem and self-handicapping.

CHAPTER 7

Study 5: The Relationship between Self-Esteem and Self-handicapping

Self-handicapping presumably occurs because of threats to self-esteem on important self-relevant dimensions (Tice, 1991). Berglas (1985) described the typical person who self-handicaps as someone who has a positive sense of self but reacts and behaves as if that self-esteem can be damaged easily. Berglas' statement suggests that absolute level of self-esteem and the certainty of the estimation of self-esteem are distinct variables, although related. Individual differences in self-esteem should therefore affect the tendency to self-handicap. There is a body of literature (Harris & Snyder, 1986; Kimble et al., 1998; Strube & Roemmele, 1985; Tice, 1991; Tice & Baumeister, 1990) devoted to describing how individual differences in self-esteem affect the tendency to self-handicap. Despite the literature, there is scant evidence for the influence of self-esteem on self-handicapping in the physical domain. The following study represents the fourth aim of this thesis.

Self-esteem has been hypothesised to affect the tendency to self-handicap in two conflicting ways. Snyder and Higgins (1988) and Rhodewalt (1990) aptly summarised the two. Snyder and Higgins contended that as performance uncertainty might stem from any number of factors, it was more likely that people with low self-esteem would self-handicap than people with high self-esteem because the former encounter more situations where they are uncertain about their ability to produce successful outcomes. Alternatively, Rhodewalt suggested that self-handicapping is more about protecting self-image, and individuals with low self-esteem are less likely to self-handicap than individuals

with high self-esteem because they hold fewer positive images and less need to protect self-image. The study explores the conflicting predictions.

Evidence for the Relationship between Self-Esteem and the Use of Self-handicapping Strategies

Self-esteem does affect the tendency to self-handicap in a number of different ways. There is evidence (Harris & Snyder, 1986) that the individuals who have low self-esteem engaged in self-handicapping by not practicing for a test of intelligence compared to individuals who are more certain. Harris and Snyder argued that although level of self-esteem was an important variable in self-handicapping it was the certainty of the estimate that was the critical variable. They recruited participants who were high and low in self-esteem and certainty of self-esteem into an evaluative study of intelligence. Participants were differentiated into six groups on measures of self-esteem (*high* and *low*), certainty of self-esteem estimations (*high* and *low*), and gender (*male* and *female*). Certainty of self-esteem estimations involved participants rating how certain (1 = *not at all certain*, 5 = *very certain*) they were of each of their answers on the measure of their level of self-esteem.

Self-handicapping was operationalised in two ways: first, as the number of problems attempted in the practice situation, and second, as the amount of time spent practicing. Harris and Snyder (1986) hypothesised that not practicing would allow participants to augment ability attributions following success and cloud the attributions regarding performance following failure. Before the test, participants completed a measure of anxiety and received information that “warming-up” before intelligence tests had an effect on test performance, and

completing practice test items before the test would lead to better test outcomes. Before the test, participants were offered a practice session. Next, participants completed practice test items and then completed the sham test and then another measure of state anxiety. After the test, participants completed a questionnaire to assess their attributions about their test outcomes.

Results supported the anticipated differences in self-handicapping because of certainty of self-esteem and gender, but not for differences in level of self-esteem. Males attempted fewer practice problems than females, with males who were uncertain of their self-esteem estimations attempting fewer ($M = 18.82$) than their female counterparts ($M = 29.17$) and fewer than males who were certain of the self-esteem estimations ($M = 25.77$). The amount of practice time variable did not reach significance, but did follow a similar pattern to the number of test problems attempted.

The implication from the study (Harris & Snyder, 1986) is that males who are uncertain of their self-esteem estimations and are faced with an evaluation of ability, manipulate their practice behaviour to offset consequences of flawed performance. Nonetheless, the results do not address the issue of whether certainty is related to high or low levels of self-esteem. Moreover, several possible shortcomings related to methodological issues allow alternative explanations.

The protocol contained no manipulation of performance certainty. As previously discussed, performance uncertainty is an antecedent related to individuals' propensities to self-handicap in situations of evaluative threat (Thompson, 1999). Thus, it cannot be determined whether evaluative threat

associated with success or failure combines with uncertainty of self-esteem to affect the tendency to self-handicap.

Also, of the two dependent variables used in the study, the instructions offered to participants only identified practice time as the mitigating excuse. The number of attempted practice problems was not mentioned as a possible mitigating excuse. The researchers reported that they used the following instructions: "Just as athletes warm up before a big meet or game, we'd like you to spend as much or as little time as you'd like warming up...keep in mind that if you are warmed up, you'll score better on the test" (p. 454). These instructions gave no indication that the number of practice problems was a possible alternative excuse.

A possible consequence of the ambiguous and missing instructions to participants was that some participants might have believed that the only mitigating excuse available to them was to limit their amount of practice. Some participants might have spent a longer amount of time on each practice item in an effort to ensure they were adequately prepared for the upcoming test, rather than as a means of self-handicapping their performances. Given that the sample was drawn from undergraduate university students, and the test was predictive of intelligence, it is logical to expect that the participants would have taken their time to ensure that they were adequately prepared. Nevertheless, the researchers might have interpreted the participants' adequate preparations as a self-handicapping ploy.

Contrasting the aforementioned findings is literature (Tice & Baumeister, 1990) that underscores a relationship between level of self-esteem and self-handicapping. The implication of the evidence is that both low and high self-

esteem affect the tendency to self-handicap, but for differing self-protective reasons. Tice and Baumeister recruited participants into a sham test of intelligence. The sample was divided into self-esteem groups (*high* and *low*) based on a modified version of the Janis-Field scale that emphasised social self-esteem, particularly global self-regard, and school competence. Participants were assigned to one of two performance information conditions. Participants either received information that they had succeeded (*success condition*) or received no performance information (*no feedback condition*) to ascertain the effect of certainty about performance on the tendency to self-handicap. The success condition involved telling participants that their scores were equal to the 96th percentile. The percentiles and the scores were shams. The authors predicted that in the no feedback condition on the test, people with high self-esteem would self-handicap by practicing less for a subsequent test than people with low self-esteem. They suggested two reasons for the direction of their hypothesis. First, individuals with high self-esteem have greater confidence in performing well and the absence of success would create threat. Second, individuals with high self-esteem estimations have a greater tendency to self-handicap for strategic self-enhancing purposes.

The sham test involved participants attempting to roll a ball up two inclined metal rods. Points were allocated when participants moved the ball up the rods to a point where it fell into a hole. Information about the scoring system indicated that higher scores reflected greater intelligence. The protocol involved two parallel tests with an opportunity to use a mitigating excuse (minimal practice) between the two test periods. Self-handicapping was operationalised as the amount of time spent by participants practicing before the parallel test.

After the first test and following the feedback manipulation, the researchers gave instructions to all participants that indicated that practicing the test before the parallel test would lead to improved scores. All participants were then free to practice before the parallel test. The results (Tice & Baumeister, 1990) showed a significant interaction between level of self-esteem and performance feedback. Specifically, participants in the low self-esteem group practiced less ($M = 215.8$ seconds) in the success condition than their counterparts in the no feedback condition ($M = 412.5$ seconds). There was a marginally significant reversal of this pattern for participants in the high self-esteem group ($p < .10$). Pairwise comparisons within the performance condition and self-esteem group showed that in the no feedback condition, participants in the high self-esteem group practiced significantly less than individuals in the low self-esteem group. This pattern was not repeated for the success condition.

There are several implications stemming from the results (Tice & Baumeister, 1990). One outcome of the study was the finding that people with high self-esteem have a greater tendency to self-handicap compared to people with low self-esteem when there is an absence of information about performance. The implication is that people with high self-esteem expect to succeed and when they believe they have not succeed, they self-handicap. Also, another finding indicated that people with low self-esteem who experienced non-contingent feedback (success) had a greater tendency to self-handicap compared to people with high self-esteem. The implication of this result is that people with low self-esteem may not enjoy many experiences of success and that when provided with such an event, they self-handicap to preserve that experience. Finally, when people with high self-esteem experienced non-contingent feedback (success),

they did not have a tendency to self-handicap. In sum, the implication is that different levels of self-esteem are associated with self-handicapping, but there are different motives for using self-handicaps. High self-esteem seems to be associated with augmenting self-image, whereas low self-esteem is related to self-handicapping but for self-protective reasons.

Nevertheless, there are possible shortcomings that limit the applicability of any conclusions that can be drawn from the results (Tice & Baumeister, 1990). There is the possibility that the results (Tice & Baumeister) are not quite the whole picture because of the absence of an ego-relevance measure. Despite the researchers acknowledging that self-handicapping occurs when there is evaluation of important self-relevant dimensions, they did not include a measure of the ego-relevance of the test outcomes for the participants. Consequently, it is difficult to determine the relationship between self-handicapping and self-esteem because some individuals may not have experienced an evaluative threat posed by the performance outcomes. Past research has shown that the pattern of self-handicapping changes when the ego-relevance of a domain is high compared to low.

There are two concerns with the feedback conditions. It is possible that the no feedback condition could have also presented an evaluative threat to participants. All participants were given the same information about the evaluative potential of the test. Participants in the no feedback condition could have interpreted the absence of performance information as a failure because of the lack of information about their efforts. The use of a no feedback condition is considered by some authors to be equivalent to a failure condition because of the lack of any information to indicate otherwise. Moreover, all participants were

privity to feedback concerning their efforts. For example, it appears that participants were able to see the ball drop into the hole or see how far it traveled up the rods. Thus, the validity of the success condition may have been compromised because participants may have succeeded in all of their attempts but were in the no feedback condition. Thus, the suggestion that they did not know about their success might be misleading.

The nature of the sham test might have presented a threat to external validity because of its uniqueness. The use of a physical skill game to test nonverbal social intelligence is an unusual combination. Thus, the undergraduate university students may have viewed the test as being an invalid measure of intelligence.

In a follow up study, Tice (1991) disentangled the motivational reasons for the use of self-handicapping in a series of four studies. Pertinent results for the present discussion involve relations between the diagnosticity of test outcomes, level of self-esteem, and self-handicapping. Tice hypothesised that people with high self-esteem would self-handicap for enhancement or augmentation reasons but people with low self-esteem would self-handicap for esteem protection.

Participants were divided into two performance outcome groups by the information they received about the diagnostic outcomes of the test. The two conditions were either a test that only identified people who were extremely deficient at the ability being measured (*failure meaningful condition*), or extremely extraordinary (*success meaningful condition*). Thus, Tice argued that the manipulation of the task outcome conditions had implications for participants' self-esteem. Participants were further divided by measures of self-esteem (*high* and *low*) and ego-relevance (*important task* and *unimportant task*). Self-esteem was measured using Silverman's adapted form of the Janis and Field

Feelings of Inadequacy Scale (1959), a measure of social self-esteem. Self-handicapping was operationalised as the amount of practice attempted before a test of intellectual ability.

Using a similar protocol as the aforementioned study, the results showed that low self-esteem affected the tendency to self-handicap but only when evaluation indicated failure. In Study 1 (Tice, 1991), in the success is meaningful condition, participants in the high self-esteem group practiced significantly less ($M = 196.6$ seconds) than individuals in the low self-esteem group ($M = 366.7$ seconds). In the failure is meaningful condition, participants with high self-esteem practiced significantly less ($M = 213.6$ seconds) than participants with high self-esteem ($M = 309.7$ seconds). Pairwise comparisons for each self-esteem group revealed that people with low self-esteem, practice significantly less if they believed failure at the task was meaningful than if they believed success was meaningful. This pattern was not repeated for the high self-esteem group. Thus, Tice interpreted the result as evidence that the people with low self-esteem self-handicap to protect against esteem threatening implications of failure rather than success.

Tice's (1991) interpretation of the results goes beyond the data. She asserts high self-esteem is associated with self-handicapping but for attributional motives and low self-esteem is associated with self-handicapping for self-protective reasons. Tice argued that the results revealed that people with high self-esteem self-handicap when there is an opportunity to appear to be outstanding, whereas people with low self-esteem, self-handicap exclusively to protect themselves from probable failure. An alternative explanation for high self-esteem and success condition participants practicing less is that they

received feedback that they were doing well and did not feel they needed to do more practice. The results in this condition may have nothing to do with self-handicapping.

The nexus between self-esteem and self-handicapping is evident in one study of young people. Kimble et al. (1998) examined the variable of age on the tendency to self-handicap in children. As part of the study, they divided participants into self-esteem groups based on a measure of global self-esteem (Rosenberg's Self-esteem scale). Their primary aim was to assess if differences in when children were reminded of their personal resources would affect the tendency to self-handicapping. To achieve this the groups were then divided into two groups based on when the completion of the self-esteem inventory (*before the evaluative test* and *after the evaluative test*). The researchers argued that participants in the low self-esteem group who were made aware of their feelings of self-esteem before they practiced for the task would be more likely to self-handicap than those who completed the self-esteem measure after practicing.

Different information about the intent of the test was also given to participants. In each self-esteem group, half the participants were told that they were going to play a game that was being tested for the classroom. They were told that although how well they went in the game was not important, practicing the game beforehand would affect their actual scores. The participants were then given booklets marked as "practice books" and asked to practice as much or as little as they pleased. The amount of time practiced and the number of problems attempted was noted for each child.

The remaining children were told that they were taking an intelligence test and that the amount of practice would affect their test scores. They then received

the same practice booklet but marked as a “test booklet” and asked to practice as much or as little as they wanted to. Again, practice time and number of problems attempted was recorded as the dependent variables. The authors argued that the effect of this manipulation created the belief in half the group that their intelligence was about to be evaluated, with the remainder believing that their ability was not being evaluated.

The results showed self-esteem and gender interaction. Specifically, 8-year-old boys, but not girls, in the low self-esteem group, practiced less for the upcoming test than their counterparts in the high self-esteem group. The authors speculated that the results indicated that for boys aged 8, level of self-esteem affected their tendency to self-handicap. For the 12-year-olds, those in the high self-esteem group practiced more than participants in the low self-esteem group, but only when they had taken the test of self-esteem before practice.

In sum, the evidence from the aforementioned studies gives an indication that level of self-esteem is related to the tendency to self-handicap, but for differing reasons. One line of evidence (Harris & Snyder, 1986) showed that uncertainty of estimations of self-esteem affected the tendency to self-handicap, but it is unclear whether uncertainty related to high or low self-esteem. Contrastingly, several pieces of evidence (Kimble et al., 1998; Tice, 1991; Tice & Baumeister, 1990) were associated with level of self-esteem sharing a relationship with self-handicapping, but for different motivational reasons. Added to the mixture of evidence is literature that describes the relationship but in the context of the individual variable of trait self-handicapping.

The variable of trait self-handicapping is supposedly an individual difference in the proclivity to use self-handicaps (Rhodewalt, 1990). A body of literature

(Prapavessis & Grove, 1998; Strube & Roemmele, 1985) shows that trait self-handicapping and self-esteem are separate constructs but interact to influence the tendency to self-handicap. For example, Prapavessis and Grove (1998) explored the relationship between self-esteem and trait self-handicapping and the use of self-reports of impediments as a means of self-handicapping. Using a non-random sample of athletes, the researchers proposed a mediating role for level of self-esteem on self-handicapping. The authors hypothesised that the level of self-esteem would interact with the two indices of trait self-handicapping to mediate the number of impediments that the athletes would offer before an upcoming important event.

Elite male golfers completed measures for the two indices of the SHS (Jones & Rhodewalt, 1982), trait excuse-making and trait effort-expended and a measure of self-esteem (Rosenberg's Self-esteem scale). A self-reported ranking of event importance measured the ego-relevance of the domain to the participants, with those who rated the event as a five or above on a 10-point scale being included in the data analysis.

The results (Prapavessis & Grove, 1994) showed that trait excuse-making was associated with self-esteem. Specifically, individuals with low self-esteem showed a high proclivity to use self-handicaps before important events. They also reported that there was also a significant relationship between trait excuse-making and the citing of impediments related to performance. Self-esteem was found to associated with perceived impediments to performance when regressed with trait excuse-making. Specifically, participants with low self-esteem and who scored high on the trait excuse-making measure offered more performance related impediments than other participants did before important events.

The results from the study supported the concept that level of self-esteem served as a negative mediator; thus one reason individuals with a disposition to self-handicap list more perceived impediments to performance is because they have less self-esteem. Nevertheless, there are methodological shortcomings to the study by Prapavessis and Grove (1994). There was no manipulation of performance certainty. Thus it is unclear if the results link the relationship between self-esteem and self-handicapping to non-contingent success or non-contingent failure. Also, the dependent variable was the number of cited perceived impediments experienced before the competition. In previous physical domain research, the protocol has required participants to estimate the degree of impact that the events will have on performance as the use of a self-handicap implies an obstacle to performance. Given the possibility that sports-persons regularly cite excuses not as self-handicaps but, as a means of hedging their bets, there remains some doubt about the conclusions reached by the researchers because it is unclear if the athletes were claiming some diminishment of performance.

In sum, the evidence for an anticipated relation between self-esteem and self-handicapping is unclear. None describes how individual differences in self-esteem affect the tendency to self-handicap when young people are faced with evaluative threat. Theoretically, the variable of certainty of self-esteem should be a more robust indicator of the tendency to self-handicap than level of self-esteem. In the original paper on self-handicapping (Jones & Berglas, 1978), it was uncertainty about one's positive self-conceptions and abilities that was the critical motive driving self-handicapping behaviour. McFarlin and Blascovich (1981) argued that a global assessment of self-esteem obfuscates individual

differences, and measures of the certainty of self-esteem estimations provide a better distinction. This investigation explored how individual differences in self-esteem, certainty of self-esteem, and trait self-handicapping are associated with the tendency to self-handicap. The aim was achieved by exploring the relationship between the three independent variables and the dependent variable of self-reported performance disruption. Moreover, the relationship was explored within the context of a non-contingent failure group and a non-evaluative group.

Research Aims for Study 5

Given the lack of published evidence that described the nature of the relationship between self-esteem and self-handicapping for the physical domain, it seemed important to clarify the relationship. For the present study, participants completed a measure of self-esteem, certainty of self-esteem, trait excuse-making, and trait effort-expended. Despite the low reliability of the two subscales of the SHS reported in Study 4, they were included in this study to confirm their low internal consistency for the population. The first objective of the present investigation was to explore the utility of three independent variables: feedback contingency condition (*non-contingent failure & non-evaluative control*), level of self-esteem, and certainty of self-esteem, to predict self-reported performance disruption. The review of literature indicated that certainty of self-esteem and level of self-esteem should be related to self-handicapping. A secondary aim was to assess the impact of two measures of the trait self-handicapping scale, trait effort-expended and trait excuse-making, and gender, in the prediction of self-reported performance disruption. A multiple regression model was used to first assess the contribution of feedback contingency, and then contribution of certainty of self-esteem. In the third block the variables of level

of self-esteem, and the two trait measures of self-handicapping were entered into the model. In the fourth block, the variable of gender was entered to determine its contribution to the prediction of performance disruption.

As there was limited evidence to suggest the direction of hypotheses relating to the relationship between self-esteem and self-handicapping for the physical domain, the direction of the hypotheses followed the evidence from the academic domain. Based on the literature I predicted that individuals who were uncertain of their self-esteem would self-handicap when faced with failure on an evaluative test of physical ability. Harris and Snyder (1986) showed that uncertainty about self-esteem estimations were associated with a tendency to use self-handicaps. Contrastingly, Tice (1991) showed that level of self-esteem was associated with self-handicapping with highs and lows associated with different motives for self-handicapping. These findings suggest that people who are uncertain about their high self-esteem may not engage in self-handicapping following failure. Thus, for people who are low in self-esteem, I proposed that their concerns about avoiding negative self-views would be associated with self-handicapping following failure. It would seem reasonable then that higher levels of uncertainty about self-esteem estimations would also be associated with greater self-handicapping.

Method

Participants

One hundred and sixty young athletes (males $n = 80$, females $n = 80$) were randomly selected from 15 sport teams from a range of sports. Sports included Australian rules football, basketball, cricket, soccer, softball, and netball. Age of

participants ranged from 13 to 16, with equal numbers in each age group and gender ($n = 20$). A large number of athletes gave their consent to participate in the study ($N = 321$). Of the consenting participants, only a small number indicated that sporting outcomes had low ego-relevance ($n = 3$). Athletes not selected for the present study were sent a letter thanking them for their interest and the reasons for the non-selection. The random sampling procedure followed the same procedure as that described in Study 3. All students were English speaking.

Measures and Instruments

Sham Physical Skill Test

All participants completed the sham test as outlined in Study 1.

Feedback Contingencies

The operational definition for evaluative threat was the same as that established in Study 4.

Inventories

The measures of self-reports of perceived impediments (Appendix J), ego-relevance (Appendix H), check for the effectiveness of the experimental manipulation of performance certainty (Appendix I), and the trait of self-handicapping (Appendix O) in this study were the same measures as those described in Study 4. Participant initiated impediments cited in Study 3 were added to the measure of perceived impediments this study. Additional inventories for this study included the following.

Self-esteem Measure

To obtain a measure of self-esteem, participants completed the Coopersmith Self-Esteem Inventory or CSEI (Coopersmith, 1990). The short form of the scale is a 25-item scale (Appendix Q) and is reported to be a reliable and valid measure of young people's global feelings of self-worth and self-acceptance. Participants responded to a series of short statements by selecting either one of two responses; *Like me* or *Unlike me*. For the like me response, a score of 1 is given, the Unlike me response attracting no score. For the short form version the total score is multiplied by 4; thus the total maximum score is 100, with higher scores reflecting higher self-esteem. I used the CSEI because I was interested in the impact of the level of global self-esteem on self-handicapping, but the scale needed to be suitable for the population in the age range (13 - 17). Spatz and Johnson (1973) reported that the CSEI scale has acceptable internal reliability for young people (.81 for grade 5, .86 for grade 9, & .80 for grade 12). Coopersmith (1990) reported that the CSEI has acceptable construct, concurrent, and predictive validity.

Certainty of Level of Self-esteem

The certainty of level of self-esteem index contained 25 statements that corresponded with the 25 items on the CSEI (Coopersmith, 1990) inventory. For each item on the CSEI, participants rated how certain they were of their responses. Participants recorded their certainty on a scale ranging from 1 (*not certain at all*) to 5 (*very certain*). Summing of all scores gave a single measure with a possible range of 25 to 125, with high scores indicating higher feelings of certainty. Previous researchers (Harris & Snyder, 1986) have used a similar

procedure to obtain a measure of self-esteem certainty. Harris and Snyder reported that when they used a similar procedure to obtain a measure certainty of self-esteem estimations on the Rosenberg Self-esteem Scale, the index had high test-retest reliability and high internal consistency.

Debriefing process

This study adopted the same debriefing procedures used in Study 4.

Procedure

The procedure followed the procedures detailed in Study 4. All self-report inventories except the SIC, the post measure of control, and the estimation of performance disruption were completed before the first sham test. Where possible, all inventories were completed with participants from the same sports team at the same time. In some cases due to absences and sporting commitments, the self-report inventories were completed on the same day as the sham test. Where possible, participants completed the inventories and the sham test in private conditions, although privacy varied because of the wide range of sports teams' practice locations. To avoid details of the test being discussed between participants, sports teams were only accessed once for the sham test participation. Nonetheless, in some circumstances it was necessary to revisit teams when time prevented all participants completing the sham test in one sitting.

Design and Analyses

Several statistical procedures were used to meet the research aims. Initially, all analyses were the same as those described for Study 4. To assess the success

of the feedback manipulation an analysis of covariance (ANCOVA) assessed differences in participants' perceptions of control across the feedback contingency conditions. The data were assessed to ensure that the assumptions for ANCOVA were met. All results were within the critical thresholds (Hair et al., 1995). No data were transformed.

Regression analysis was used to identify the relationship between multiple independent variables and the self-handicap of performance disruption. Multiple regression was chosen as the statistical technique to meet the aims of the study because it allows independent variables to be added to the model according to theoretical relationships (Ho, 2000). Acceptance of regression results is contingent upon a number of factors, some of which include test of linearity, homoscedasticity, independence of error terms, normality, and multicollinearity and singularity. It is suggested that tests of the assumptions for regression be completed with all variables entered into a single regression analysis before determining a final model (Hair et al., 1995; Ho, 2000).

All data met the assumptions for regression, with all results within specified critical threshold levels (Hair et al., 1995). Given that the relationship between the independent variables and the dependent variable was unknown, a conservative relationship was factored into the regression equation. A sample size of 160 would have adequate power (.80) with five independent variables to detect R^2 values of .05, with alpha set of .05 (Cohen, 1988). To maintain equal cell sizes ($n = 20$) for each age and gender group (13 to 16), 160 participants were recruited for the study.

Correlation results for the independent variables are revealed in Table 25. Several correlations involving self-esteem are worthy of highlighting. There is a

positive, yet low correlation between self-esteem and certainty of self-esteem.

Thus, it appears that people who have high estimates of their self-esteem are more certain of their estimates than people with low self-esteem. This finding is consistent with previous research (Greenier et al., 1995).

Table 25

Correlation Matrix for Self-report Measures (N = 160)

Variables	1	2	3	4
1. Self-Esteem	-	11*	-28*	-03
2. Certainty of self-esteem	11*	-	-15*	-01
3. Trait Excuse- making	-28*	-15*	-	53*
4. Trait Effort- expended	-03	-01	53*	-

Note. Decimal points are omitted.

* $p < .01$

Also, level of self-esteem is negatively correlated with trait excuse-making, which would indicate some consistency with the Snyder and Higgins (1988) hypothesis that low self-esteem is related to individuals being more prone to self-handicap.

Results

All participants ($N = 160$) completed the study. Participants indicated that they played a range of sports, with the major team sports for males being Australian rules football, soccer, cricket and basketball. For females, the major

sports were softball, netball, soccer, and basketball. Major independent sports for the sample were cycling, rowing, and athletics.

Perceived Impediments to Performance

As with previous studies, young people cited numerous events as potential impediments to their performance. A summary of the frequency analysis and a cross-tabulation between genders is presented in Table 26. The statistics in the count column represent the number of participants who answered that they had experienced the impediment. The statistics in the responses column presents the number of participants who nominated each of the impediments (in the count column) as a percentage of the total number of responses generated. In total, 148 participants generated 420 responses. The reported statistics in the male and female columns represent the sample of each gender that cited each impediment as a percentage of the total sample for each gender. Impediments not selected are not reported in the summary of frequencies. Events with low frequency responses such as, I've not felt like training ($n = 3$) I've quit sport ($n = 3$), I've partied too hard ($n = 5$), I've had late nights ($n = 6$) and I've experienced personal problems ($n = 5$) are not shown.

The events reported by participants were broad and reflected a similarity to the pattern displayed in the previous studies of this thesis. For the present study, the most frequently cited event or impediment was related to tiredness ($n = 49$) followed by problems with friends ($n = 41$), and an inability to concentrate ($n = 40$).

Table 26

Summary of Frequency Analysis for Impediments to Performance

Impediment	Count	Responses	Females	Males
I've been tired	49	10.4	4.9	18.2
I have played lots of sport	33	7.0	12.8	9.5
I've had a sports injury	23	4.9	5.4	10.1
I have not done this before	30	6.4	8.1	12.2
I have an illness	20	6.0	4.1	9.5
I've had other commitments	26	5.5	6.1	11.5
I've not trained	28	6.0	11.5	7.4
I've had team/sport problems	11	2.3	2.7	4.7
I've been in trouble at school	13	2.8	4.7	4.1
I've had conflict with my coach	7	1.5	2.0	2.7
I've had muscular soreness	19	4.1	5.4	7.4
I've had problems with friends	41	8.7	12.8	14.9
I've not practiced this week	8	1.7	3.4	2.0
I've had family problems	30	6.4	6.1	14.2
I've had work commitments	28	6.0	8.8	10.1
I've had lots of other things to do	7	1.5	2.7	2.0
It's been too warm	10	2.1	1.4	5.4
I've had a cold	12	2.6	1.4	6.8
I've lacked concentration skills	40	8.5	12.7	14.2
I've had too much homework	12	2.6	.7	3.4

Similarly, problems with playing too much sport ($n = 33$) and sports injuries ($n = 23$) were again frequently cited reasons for why performance may be impaired.

The most frequently cited impediment for males related to tiredness, inability to concentrate, and personal problems. For females, the most frequently cited impediments related to tiredness, inability to concentrate, and sport commitments. The diversity and number of responses from the sample represents some doubling-up of impediments. For example, the impediment related to sports injury may represent the self-report of muscular soreness.

Validation of Performance Uncertainty

Means and standard deviations for both feedback contingency groups for perception of control scores across the two trials are presented in Table 27.

Table 27

Descriptive Statistics for Perceptions of Control

Group	<i>M</i>	<i>SD</i>
Pre Experimental Manipulation		
Non-contingent	3.46	.92
Control	3.27	.85
Total	3.36	.92
Post Experimental Manipulation		
Non-contingent	2.58	.89
Control	3.30	.89
Total	2.94	.97

The predicted direction for the results were that for participants exposed to the non-contingent failure feedback would report lower perceptions of control after the experimental manipulation than participants in the non-evaluative control condition. Before the first test, there was a similar level of confidence in being able to control the test outcome between participants in the non-contingent failure condition ($M = 3.46$) and participants in the control condition ($M = 3.27$). After exposure to the feedback contingency manipulation, participants in the non-contingent failure group ($M = 2.58$) reported having lower perception of control for the second test than participants in the non-evaluative control group ($M = 3.30$).

The results of the ANCOVA are presented in Table 28. The result of a test of between-subjects effects for the main effect of feedback contingency condition was significant, indicating that when pre-test perceptions of control were statistically controlled, participants in each of the two feedback contingency conditions differed in the post experimental manipulation perception of control measure. Using η^2 as the measure of effect size, feedback contingency group accounted for 29 per cent of the total variability in perception of control score.

Pairwise comparisons between the two feedback contingency conditions showed that participants in the non-contingent failure group differed significantly from participants in the non-evaluative group ($p = .0001$). Using Cohen's d for effect size, there was large effect size ($d = .80$) between the non-contingency failure group and the non-evaluative group, which is equal to 47 per cent non-overlap between mean scores.

Table 28

ANCOVA for Post Experimental Perception of Control

Source	<i>df</i>	<i>F</i>	η^2	Power
Between Subjects				
FBC	1	44.29	.22	1.0
Pre Control	1	64.25	.29	1.0
<i>S</i> within-group error	157	(.58)		

Note. FBC = Feedback Contingency Condition. Values enclosed in parentheses represent mean square errors. *S* = subjects.

It seems clear that the manipulation was successful in the expected direction. The mean score of the non-contingent failure group is equal to the 79th percentile for the non-evaluative group. The results are supportive of the assumption that participants exposed to the feedback contingency experienced significantly more uncertainty about their performances on the second test than did participants in the non-evaluative condition. Having established that the experimental manipulation had the desired effect on participants' perceptions of performance certainty, the tests of the hypotheses proceeded.

Reliability Measures for the Independent Variables

Estimates of reliability and 95 per cent confidence intervals for the mean for the four metric independent variables are shown in Table 29. Analysis of the reliability estimates for the four measures indicated acceptable estimates for all but the index of trait effort-expended (Burns, 1995). The result for trait effort-expanded ($\alpha = .44$) was deemed unacceptable and the variable was not used in the regression analysis.

Table 29

Summary of Descriptive Statistics For Variables Used to Predict Self-reported Performance Disruption

Variables	<i>M</i>	<i>SD</i>	Alpha	<u>95% C.I.</u>		Skewness	Kurtosis
				Lower	Upper		
SE	48.57	9.12	.97 ^a	47.15	50.00	.56	.29
SEC	90.73	8.31	.78 ^b	74.64	107.21	.05	-.56
TEM	21.26	6.72	.77 ^c	20.21	22.31	.01	.60
TEE	10.76	4.12	.44 ^c	10.11	11.04	.42	-.07

Note. SE = Self-esteem, SEC = Certainty of Self-esteem,

TEM = Trait Excuse-making, TEM= Trait Effort-expended

^a = Kuder Richardson 21, ^b = Split half, ^c = Cronbach's Alpha

Regression Estimates for Feedback Contingency Condition, Certainty of Self-esteem and Level of Self-esteem

The aim of the regression analysis was to determine the aggregate and independent impact of five independent variables (feedback contingency, level of self-esteem, certainty of self-esteem, trait excuse-making, & gender) in the explanation of the variance in performance disruption. Self-handicapping is associated with uncertainty and the previous studies in this thesis have shown that failure has a strong association with self-handicapping. The order of entry for the hierarchical regression analysis was feedback contingency in block 1 followed by certainty of self-esteem in block 2. In block 3 level of self-esteem, trait excuse-making and gender were added to assess their relative contributions to the prediction of the dependent variable.

The unstandardised regression coefficients (B), the intercept, the standardised regression coefficients (β), and the standard error for B for each block of the model are revealed in Table 30. The F test of partial regression coefficients was used to assess the significance of the predictor variables as main effects. A t -test assessed the relative importance of each variable to the model.

In step 1, feedback contingency condition contributed to adjusted $R^2 = .14$, $F_{change}(1,158) = 26.87$, $p < .0001$. In step 2, with certainty of self-esteem entered, the explained variance did not increase $F_{change}(1,157) = 3.10$, $p = .08$. The test of the null hypothesis for the linear relationship between the predictor variables of feedback contingency condition and certainty of self-esteem and the dependent variable of self-reported performance disruption was significant $F_{inc}(2,157) = 15.16$, $p = .0001$. Nonetheless, the result of the t -test for the B coefficient for certainty of self-esteem did not reach the required level thus the null hypothesis that the regression coefficient is zero is not rejected. A check of the confidence intervals for the regression coefficient (B) for certainty of self-esteem showed that they contained zero, confirming that certainty of self-esteem is independent of performance disruption.

In step 3, level of self-esteem, trait excuse-making, and gender were added to the model. With the addition of the three variables, adjusted $R^2 = .18$. The model was still significant $F_{inc}(5, 154) = 8.03$, $p < .0001$. The addition of the three variables did result in a significant change of R , $F_{change}(3,154) = 2.912$, $p = .03$. The beta coefficient (B) for level of self-esteem was negative and significant, $t(153) = -2.19$, $p = .02$. For the variables of trait excuse-making and gender, the t -values did not reach the required level and the null hypotheses for each was not rejected. A check of the confidence intervals for B for trait excuse-making and

gender showed that for each variable, the intervals did included zero confirming that both variables are independent of performance disruption.

Table 30

Summary of Multiple Regression Analysis for Variables Predicting of Self-reported Performance Disruption (N = 160)

Model	B	SE B	β
Step 1			
1. Feedback Contingency	9.77	1.86	.38*
Step 2			
Feedback Contingency	9.55	1.87	.37*
Certainty of Self-esteem	.20	.11	.12
Step 3			
Feedback Contingency	8.62	1.88	.33*
Certainty of Self-esteem	.20	.11	.12
Level of Self-esteem	-.27	.10	.19**
Trait Excuse-making	-.24	.16	-.17
Gender	-.11	.27	-.03

Note. Step 1 $R^2 = .14$; $\Delta R^2 = .14$ ($p < .05$). Step 2 $R^2 = .16$; $\Delta R^2 = .15$ ($p < .05$).

Step 3 $R^2 = .20$; $\Delta R^2 = .18$ ($p < .05$)

* $p < .0001$, ** $p = .03$

Numerous authors recommend that insignificant variables be trimmed from the model (Hair et al., 1995). A second hierarchical regression model determined

the relationship between the predictor variables of feedback contingency and level of self-esteem and self-reported performance disruption. Feedback contingency condition ($B = 9.53$, $SE = 1.87$, $\beta = .37$) and self-esteem ($B = -.20$, $SE = .10$, $\beta = -.14$) explained 15 per cent of the variance ($\Delta R^2 = .15$) in self-reported performance feedback. The model was significant $F_{inc}(2,157) = 15.68$, $p = .0001$.

Feedback contingency condition was dummy coded, (1 = *non-contingent failure* and 0 = *non-evaluative control*), the regression coefficient (B) indicated that participants in the non-contingent failure condition reported higher levels of performance disruption than their counterparts in the non-evaluative control condition. The beta weight statistic (β) for the variable of feedback contingency condition indicated that in terms of its relative importance to the given model, it had the strongest relationship with self-reported performance disruption. The negative direction of the regression coefficient (B) for level of self-esteem indicated that lower scores on the variable of self-esteem were associated with higher performance disruption scores. The beta weight statistic (β) for the variable of level of self-esteem indicated that it had the next strongest relationship with self-reported performance disruption.

The variables of certainty of self-esteem, trait excuse-making, and gender did not significantly add to the explained variance of self-reported performance disruption over and above that explained by feedback contingency and level of self-esteem. Results of the t -test for all three variables did not reach the required limit indicating that the null hypothesis that the regression coefficient is zero not be rejected. A check of the confidence intervals for the regression coefficients for

all three variables confirmed that they contained zero, confirming the initial decision that the variables are independent of performance disruption.

In summary, the two variables of feedback contingency and level of self-esteem were significant predictors of self-reported performance disruption. The variables of certainty of self-esteem, trait excuse-making, and gender were found to be statistically non-significant contributors to performance disruption.

Interpretation of the Model

The interpretation of the equation can be illustrated by using the raw regression equation. The second model contained only two variables that contributed significantly to the prediction of self-reported performance disruption. One variable, feedback contingency condition, had a positive effect. As the variable was dummy coded (0 = *non-evaluation control* and 1 = *non-contingent failure*), the positive direction of the slope as indicated by the beta coefficients showed that the relationship between the self-reported performance disruption was stronger in the non-contingent failure condition than for the non-evaluative condition. Since participants with a value of 1 represent those exposed to non-contingent failure performance scores, the coefficient score ($B = 9.53$) represented the change in predicted performance disruption relative to participants in the non-evaluative control condition. Adding the coefficient value to the constant (28.40) produced a predicted self-reported performance disruption score for those in the non-contingent failure group of 37.93 per cent.

The negative value of the beta coefficient for level of self-esteem indicated that when self-esteem was measured using a global index (Coopersmith, 1990), lower scores were associated with more self-reported performance disruption

scores and higher scores for self-esteem associated with lower levels of self-reported performance disruption. Using the regression equation, and the fitted values from the 95 per cent confidence intervals for the mean for level of self-esteem (upper = 50 & lower = 47), predicted scores for performance disruption score can be estimated. For the non-contingent failure condition, a score equal to the lower limit on the measure of self-esteem would translate to a predicted value for self-reported performance disruption of 28.5 per cent. For the non-evaluative condition, the predicted score for performance disruption would be 18.97 per cent. In contrast, using the fitted value equal to the upper confidence limit for self-esteem, the predicted performance disruption score is 27.93 for the non-contingent failure condition and 18.4 for the non-evaluative group.

Discussion

The purpose of this study was to explore the relationship between self-esteem and self-handicapping. The results of this investigation make it apparent that the tendency to self-handicap, particularly when failure causes uncertainty about successful performance, is closely associated with level of self-esteem. Hence, it seems reasonable to conclude that Tice's (1991) contention remains tenable. Specifically, this investigation provides evidence through the regression analysis that level of self-esteem was related primarily to greater self-handicapping following failure, but not following non-evaluative circumstances with the majority of self-handicapping variance accounted for by level of self-esteem and failure.

Tice's (1991) contention was that self-handicaps could serve to enhance or protect one's self-esteem, depending upon whether they are offered following

success or failure. Self-handicaps offered following success could enhance self-esteem because they imply that any subsequent success occurs despite inhibiting factors. Conversely, self-handicaps following failure can protect self-esteem because they help to sever the link between oneself and possible flawed performance.

The pattern of self-handicapping that emerged among young people in this study can be understood in light of Snyder and Smiths' (1982) hypothesis. Specifically, previous research and theory suggest that an important component in self-handicapping is the role that failure plays in the creation of uncertainty about successful performance. Rather than provide opportunities for self-presentation, failure feedback undermines positive self-views. In Tice's (1991) contention, self-handicaps protect self-esteem because they sever the link between ability and performance, therefore people with low self-esteem self-handicap to protect their self-image. The results from the present study suggest that people with low self-esteem may self-handicap when they experience failure to protect their self-esteem.

People with low self-esteem hold positive self-views, but feel they do not have the resources to maintain highly positive images (Tice, 1991). A failure experience serves to remind these people of their limited resources. In this study, young people with low self-esteem did not engage in substantial self-handicapping when they were in the non-evaluative situation. The possible explanation is that the non-evaluative environment did not contain a sufficient level of threat to warrant self-handicapping. Self-handicapping theory (Higgins, 1990) stipulates that people only handicap in evaluative situations and that when

there is an absence of diagnostic information about ability, people have no need for the strategy.

Conversely, the pattern of self-handicapping that emerged for young people with low self-esteem under conditions of failure was quite different. These young people did engage in substantially higher levels of self-handicapping. People with low self-esteem have lower expectancies of success and higher failure expectancies. Possibly, the evaluative situation in this study held sufficient threat because the first failure experience was a reminder to these young people that they possibly did not have resources to maintain a positive self-image. Subsequently, they held higher expectancies of failure on the parallel test. The threat of a second failure would confirm young peoples' fears that their abilities were insubstantial. Under such circumstances young people avert the negative implications of possible failure by self-handicapping.

In relation to the contribution of level of self-esteem, the present finding is not consistent with Rhodewalt's (1990) contention that when people with low self-esteem have their negative views confirmed they have no need to self-handicap because they have no positive image to protect. One likely explanation for the inconsistency is that the short temporal state of failure in this study may represent a different type of evaluative threat than that of persistent failure. For example, persistent failure would confirm to people with low self-esteem that they did not have the resources to maintain their positive self-views. Nevertheless, single bouts of failure do contain threat but individuals can allay this threat with a short duration type of self-handicap such as a self-avowal.

A related explanation for the inconsistency with Rhodewalt's (1990) contention is the evaluative outcomes of the test had high ego-relevance for all

participants. Ego-relevance measures have not occurred in some of the previous literature. When evaluative outcomes have high ego-relevance, young people with low self-esteem focus not only on protecting their images, but also on protecting themselves from the attributions that can be drawn from their performance. That is, they self-handicap to protect against failure. The implication is that when young people who have low self-esteem engage in tasks that are highly self-relevant, they will adopt self-defensive behaviours if they suspect that failure is a possible outcome.

There are several implications for teachers and coaches of young people involved in sport and physical activity. Specific instances of failure are likely to be particularly threatening to young people with low self-esteem when they engage in highly self-relevant tasks. In response, young people are especially prone to self-handicap to attempt to sever the link between ability and possible flawed performance. In health and physical education classes and sport, failure is conspicuous thus, teachers and coaches need to adopt strategies to minimise the impact of failure. The situational circumstances of attempting tasks in sport and health and physical education classes ensures that performance outcomes will be largely public. Teachers and coaches need to adopt strategies that ensure that implications of failure are lessened. For example, teachers and coaches need awareness of therapeutic and counselling techniques such as minimising the public nature of performance, the emphasis placed on success, and de-emphasising the importance attached to failing, as ways of lessening the evaluative threat of attempts at physical tasks.

Educators and coaches also need to be aware that self-handicaps are strategies that young people use when they suffer anxiety about successful

performance. Awareness by educators that the use of self-avowals by young people can be more than just a hedge betting strategy will allow them to use proactive strategies to change the performance climate.

The inclusion of certainty of self-esteem and other self-report measures such as the two indices for the trait of self-handicapping in the regression analysis yielded some interesting findings. Self-handicapping theory and research hold that uncertainty is a key component. The contention of Harris and Snyder (1986) is that certainty of self-esteem affects the tendency to self-handicap. Specifically, people who are uncertain of their estimations are more prone to self-handicap than people who are certain. It should be noted nonetheless that the present data do not allow a determination to be made for uncertainty of self-esteem. In this study, certainty of self-esteem did not account for a significant portion of the variance in self-reported performance disruption. There are several possible interpretations for the result.

One interpretation is that people may or may not be internally aware of how uncertain or certain their self-esteem is. This suggestion is not unique and has been noted by others (Kernis et al., 1993). For example, Kernis suggested that it is possible that the process associated with determination of certainty of self-esteem operates primarily at a non-conscious level and that some individuals are unable to accurately estimate their certainty level. Moreover, estimates of certainty of self-esteem fluctuate depending upon circumstances. Given that the measure of certainty of self-esteem occurred within a short timeframe, repeated measures may have resulted in a stronger relation to self-handicapping.

As for the remaining variables used in the regression analysis, gender did not account for the variance in self-reported performance disruption. This result is

consistent with previous studies in the physical domain and studies in this thesis, which consistently show no differences in the use of self-handicapping because of gender. Differences in self-handicapping because of gender may emerge with different achievement domains and variances in the self-relevancy of outcomes. In this study, the relevancy of the domain was controlled, with those who indicated that the domain has low relevance being excluded from the study. Thus, as the task was equally self-relevant to males, and females, self-concepts, it is not surprising that both self-handicapped following failure. Moreover, the present results apply only to the condition of failure. Evaluative threat stemming from unexplained success may result in a different relationship between self-esteem and self-handicapping.

Also of interest is the fact that the variable of trait excuse-making did not account for a significant portion of the variance in self-reported performance disruption. This finding is not consistent with previous research (Prapavessis & Grove, 1998), which indicated a significant and positive relationship. Although there are several possible explanations for the result, the most likely interpretation is that the two indices of self-handicapping (Jones & Rhodewalt, 1982) are not reliable measures for both young people and for the physical domain.

Finally, a cautionary note regarding the implications of the findings is appropriate. Although the data suggest that level of self-esteem and failure conditions are important predictors of self-handicapping, there exists an apparent conceptual-empirical disparity. In this study, the measure of level of self-esteem and hence certainty of self-esteem was a global assessment of self-worth. The review of literature indicated that the use of a global measure is typical.

Nonetheless, in Chapter 2 I defined the construct of self-esteem as hierarchical and multifaceted. The experimental manipulation of performance certainty was for a specific aspect of self-esteem. The sham feedback involving failure posed a threat to a first order dimension of self-esteem: physical self-worth. Additionally, the threat may have also threatened feelings held for the second order dimension of sport competency. Thus, there is a conceptual-empirical disparity because the measure of self-esteem was global but the threat may have been specific to feelings associated with first and second order dimensions of self-esteem. The possibility exists that the true relation for self-esteem and self-handicapping is obfuscated by the conceptual measurement disparity.

What follows next is a report of an investigation of self-esteem and self-handicapping using measures of self-esteem that assess first and second order dimensions of global self-esteem.

CHAPTER 8

Study 6: Domain Specific Self-esteem and Self-handicapping

Literature describing the relationship between self-esteem and self-handicapping has not involved the current conceptualisation of self-esteem as hierarchical and multifaceted. Self-handicapping is a strategy used when evaluations have ego-relevant outcomes, yet current research has only assessed the relationship between the two constructs in terms of a global self-esteem. This investigation represented the fifth research aim.

Recapping the discussion in Chapter 2, one contemporary view of self-esteem (Harter, 1983; Marsh & Hocevar, 1985) is of a construct that encompasses multiple self-evaluations that are specific to particular areas of ability. For example, one model (Shavelson et al., 1976) has a multidimensional and hierarchical framework that comprises several first order dimensions (e.g., physical and academic self-esteem) that underpin a higher-order factor comprising global self-esteem. The model also proposes that subareas relevant to the specific dimensions influence lower order dimensions. For example, beliefs associated with areas such as fitness, strength, and so forth underpin self-worth associated with the physical dimension.

Sonstroem and Morgan (1984) suggested that changes in physical self-efficacy brought about by participation in an exercise training programme would influence changes in physical self-worth, which, in turn, would influence global self-esteem. In a test of their model, they demonstrated support for the proposed efficacy - - physical competence - - global esteem pathway. Similarly, using the same model, McAuley, Mihalko, and Bane (1997) tested the prediction that

increases in physical fitness would result in changes in physical self-efficacy, which, in turn would translate into changes in physical self-worth, and finally changes in global self-esteem.

McAuley et al. (1997) used the Physical Self-Perception Profile (Fox & Corbin, 1989), a measure of self-esteem that reflects a multifaceted model to assess changes in physical self-esteem. As a measure of self-esteem, the Physical Self-Perception Profile (PSPP) is based on global self-esteem being related to physical self-worth (physical self-esteem) at the domain level and that underlying this level, is a subdomain level consisting of feelings regarding self-worth specific to perceptions of sports competence, attractive body, physical strength, and physical condition. The measure and the relations theorised among its components have been validated in adult samples (Fox & Corbin, 1989).

McAuley et al. (1997) were interested in describing changes in self-esteem because of participation in an exercise programme. Participants completed various self-report measures of self-esteem including, a global measure (Rosenberg's Global Self-esteem Scale), and measures of self-esteem that reflected the hierarchical nature of self-esteem. These measures included the PSPP and its related indices. Finally, a measure of physical self-efficacy was included as the authors hypothesised that self-efficacy underpinned the subdomain self-esteem. The results showed that participating in an exercise program brought about changes in self-esteem, but these changes were better represented by a measure of physical self-esteem than a global measure of self-esteem. Moreover, the subdomain measures of self-efficacy and two of the indices from the PPSS - physical condition and attractive body - were all significant predictors of changes in physical self-esteem.

For the present purpose, these findings have at least three implications. First, self-esteem has multiple levels and is hierarchical. Second, each of the levels for a specific domain seems to be interrelated. For example, changes in physical self-esteem seem to be influenced by changes in beliefs that are specific to aspects of physical ability. In the McAuley et al. (1997) study feelings regarding efficacy and beliefs about body attractiveness translated to changes in self-appraisals for physical self-esteem, and when individuals change their self-appraisals at a global level, these changes are predicated on changes in self-appraisals at domain and subdomain areas. Third, they indicate that a relationship exists between self-efficacy and the subdomain measures of self-esteem. These implications provide some support for investigating the relationship between self-esteem and self-handicapping from a multidimensional and specific viewpoint.

There is no direct evidence for the relationship between self-handicapping and self-efficacy. Nonetheless, the assumption that uncertainty about successful performance is an underpinning cause of self-handicapping suggests that there should be a relationship. Self-efficacy is a construct derived from social cognitive theory, and as a theory, it posits a triadic reciprocal causation model in which behaviour, cognitions, and the environment all influence each other in a dynamic fashion (Bandura, 1977, 1986). Wood and Bandura (1989a) stated that “self-efficacy refers to beliefs in one's capabilities to mobilize the motivation, cognitive resources, and courses of action needed to meet given situational demands” (p.408). Other work has highlighted three aspects of this definition (Bandura, 1988; Wood & Bandura, 1989a, 1989b). First, self-efficacy is a comprehensive summary or judgment of perceived capability for performing a specific task. In an organisational context, information derived from the

individual, the task, and others in the environment, may contribute to the comprehensive assessment of capability. Second, self-efficacy is a dynamic construct. The efficacy judgment changes over time as new information and experience are acquired (sometimes during actual task performance). Third, efficacy beliefs involve a mobilisation component; self-efficacy reflects a more complex and generative process involving the construction and orchestration of adaptive performance to fit changing circumstances. Thus, people who have the same skills may perform differently based on their utilisation, combination, and sequencing of these skills in an evolving context.

Arkin and Baumgardner (1985) raised the possibility that people who expect performance outcomes to be outside of their control may show an increased tendency to self-handicap. They speculated that people categorised as low self-efficacy would be particularly susceptible to using self-handicapping strategies. Self-efficacy estimates influence the social settings that people approach and determine how vigorously and persistently people will pursue goals that are either difficult to attain or blocked by obstacles. According to Bandura (1977), people who have low self-efficacy estimates will fail to persist in pursuing goals following only minimal frustration, and as a consequence, may develop debilitating fears and negative expectations regarding ability to bring about desired outcomes on future attempts at similar tasks. Moreover, Higgins and Berglas (1990) speculated that people who have low efficacy estimates might refuse to pursue a goal unless tangible or psychological obstacles encumber them. Self-handicaps should therefore be a viable strategy that would allow people with low self-efficacy to engage in achievement tasks.

In sum, to better address the issues surrounding the assumption for self-esteem and self-handicapping, there is evidence that global measures of self-esteem might obfuscate the true relationship because self-esteem may be multifaceted and hierarchical. Consequently, the present study addressed the limitation in the research. Specifically, I examined the extent to which various hierarchical measures of self-esteem and a task specific measure of self-efficacy predicted self-handicapping responses to non-contingent failure on an important physical ability test.

Research Aim for Study 6

The aim of this study was to examine the relationship between self-efficacy, self-esteem, and self-handicapping using domain specific indices of self-esteem. To this end, participants completed measures of self-esteem that reflected a current conceptualisation of self-esteem. Moreover, participants completed another self-report inventory to allow an assessment to be made for the relationship between self-handicapping and self-esteem. As there was no previous research specific to the present investigation no apriori hypotheses were formed. The aim of this study was thus;

- (a) To examine the association of the independent variables of evaluative condition, global self-esteem, physical self-esteem, physical competence, and task specific self-efficacy on the dependent variable of self-reported performance disruption.

Method

Participants

Two hundred athletes ($n = 100$, males, $n = 100$ females) completed the study. Athletes were sourced from a variety of sports clubs including cricket, basketball, netball, soccer, and Australian rules football. All students were English speaking.

Measures

Sham Physical Skill Task

All participants completed the novel skill tasks as outlined in Study 1.

Feedback Contingencies

This study adopted the same experimental procedure used in Study 5.

Inventories

The measures of self-reports of perceived impediments (Appendix J), ego-relevance (Appendix H), check for the effectiveness of the experimental manipulation of performance certainty (Appendix I), level of global self-esteem and certainty of global self-esteem (Appendix Q) in this study were the same measures as those described in Study 5. Participant initiated impediments cited in Study 5 were added to the measure of perceived impediments this study. As the aim of the study was to investigate the utility of domain specific measures as predictors of self-handicapping, three additional inventories were included.

Domain Physical Self-esteem

Within the proposed model of self-esteem, global feelings regarding the self are connected to feelings specific to various achievement domains. The Physical Self-worth subscale (Fox & Corbin, 1989) measured participant's feelings specific to self-appraisals for the physical dimension of self-esteem (Appendix R). Fox and Corbin reported that the Physical Self-worth subscale (PSW) measures individual's perceptions of their self-worth within the context of the physical achievement domain. The PSW comprises six items, with items scored from 1 to 4. Fox and Corbin reported that the internal consistency for the PSW is acceptable ($\alpha = .87$ to $.94$).

Sub-domain Measure of Physical Self-esteem

The PSPP (Fox & Corbin, 1989) provides four separate measures that supposedly underpin physical self-esteem. I decided to only use the Perceived Sports Competence (PSC) subscale (Appendix S). The decision was predicated on several pieces of evidence. First, the subscale is proposed to measure feelings of worth associated with sports ability, and the sham test and the associated deceptive performance scores were evaluations of physical skill competence. Measures such as physical attractiveness, physical strength, and physical condition, which measure self-appraisals for other aspects of self-esteem for the physical domain, would not be aspects that individuals would perceive as being threatened by the manipulation. Second, given that a number of different indices were being included, an additional three variables may have adverse effects on the regression analyses. Fox and Corbin proposed that the PSC subscale

measures individual's perceptions of their sports competence. Fox and Corbin reported that the internal consistency is acceptable ($\alpha = .87$ to $.94$).

Task Specific Self-efficacy Strength Measure

The aforementioned evidence indicated that measures such as self-efficacy might underpin subdomain measures. Following the proposed self-esteem model, individuals' feelings about specific tasks should influence their feelings regarding sports competency. A specific self-efficacy inventory measured the strength of participants' feelings of confidence of successfully completing the novel physical test (Appendix T). The measure assessed participants' confidence in completing the task successfully. Bandura (1977) recommended that designs of a specific self-efficacy measure contain a hierarchy of questions that reflect increasing degrees of difficulty to measure the level of a person's outcome and performance efficacy. Participants responded to three items, indicating the degree of confidence in their capabilities to successfully execute the behaviour required for the sham test. Scoring of responses to the three items occurred on a 100-point percentage scale comprised of 10-point increments from 1 (*not confident*) to 100 (*absolutely confident*). An average of the three items produced a single measure of self-efficacy strength. Thus, the possible maximum efficacy score was 100. The three items were: how certain are you of being able to successfully throw the ball overarm; how certain are you of being able to throw the ball overarm into the target area; and how certain are you that you will hit the centre target with all of your throws.

Debriefing Process

This study adopted the same debriefing procedures used in Study 5.

Procedure

The procedure for Study 6 followed the procedures detailed in Study 5. All self-report inventories except the measure of task specific self-efficacy were completed before the sham test. The measure of self-efficacy was completed after the first test and after the feedback contingency instructions.

Design and Analysis

The design of this study was experimental. Random selection of participants occurred to control for threats to external validity. To control for extraneous variables, all participants completed the same inventories with the researcher reading the instructions. As the study involved the use of multiple independent variables to predict a single dependent variable, multiple regression analysis described the relationship. In the regression analysis, the variables of feedback contingency condition, task specific self-efficacy, physical sport competence, physical self-worth, global self-esteem, and certainty of global self-esteem were used to assess the explained variance of self-reported performance disruption.

Given that the relationship between the independent variables and the dependent variable was unknown, a conservative relationship was factored into the regression equation. Using five independent variables with a sample size of 200 would detect R^2 values 16 to 8 per cent at an alpha level of .01 (Cohen, 1988). The sample size met the recommended ratio of 20 to 50 observations for each independent variable. Several statistical procedures were used to meet the research aim. Initially, all analyses were the same as those described for Study 4. To assess the success of the feedback manipulation an analysis of covariance (ANCOVA) assessed differences in participants' perceptions of control across

the feedback contingency conditions. Additional analyses examined the internal consistency of each scale to ensure that each measure was reliable for the present sample. An assessment of the assumptions for ANCOVA was carried out and all results were within critical thresholds. There was no transformation of data for perception of control scores (Hair et al., 1995). Test of the assumptions for the regression analysis followed those reported in Study 5. Before the initial analysis all independent variables were examined through SPSS (1999) programmes for accuracy of data entry, missing values, and fit between their distributions and the assumptions of multivariate analysis (Tabachnick & Fidell, 1989). No missing values were evident. All tests for the assumptions associated with regression analysis were carried out with none of the results exceeding critical values. Hair et al. recommended the use of standard regression when there is an absence of theory for the ordering of variables or when exploring relationships between variables. As no previous research has reported the relationship, standard regression analysis was the primary statistical analysis undertaken.

Results

One student was absent because of illness for the trials and their data was not included in the results. All students ($N = 199$) indicated that they played a variety of sports, with the majority playing team sports (74%), and followed by individual sports (15%) and then those who played both team and individual sports (11%). Common team sports for males included Australian rules football, soccer, basketball, cricket, and hockey. Common team sports for females included netball, basketball, touch rugby, and softball. Individual sports include a diverse range with common sports being golf, cycling, triathlon, and track and

field. Mean age was 14.49 (*SD* 1.11). All students reported English as their primary language spoken.

As with previous studies, young people reported numerous events as possible impediments to their performances. There were 176 respondents of whom 23 cited no impediment. The statistics in the count column represent the number of participants who indicated that they had experienced the perceived impediment. The percentage of responses statistic shows the number of respondents who answered yes to each impediment as a percentage of the total number of yes answers.

The percentage of cases statistic represents the number of participants who responded with a yes to each impediment as a percentage of the total sample. Impediments that had small percentages of responses were related to personal problems (1.3%), too many things to do (.4%), ending of a relationship (.2%), and the cessation of smoking (.2%). These impediments are not shown in Table 31.

Perceived Impediments to Performance

Frequency analysis statistics for impediments are presented in Table 31.

Table 31

Summary of Frequency Analysis for Impediments to Performance

Impediment	Count	Percentage of Responses
I've been tired	31	6.5
I have played lots of sport	20	4.5
I've had a sports injury	25	5.6
I have not done this before	21	4.7
I have an illness	20	4.5
I've had other commitments	25	5.6
I've not trained	35	7.9
I've had team/sport problems	16	3.6
I've been in trouble at school	19	4.3
I've had conflict with my coach	14	3.1
I've had muscular soreness	27	6.1
I've had problems with friends	38	8.5
I've not practiced this week	10	2.2
I've had family problems	21	4.7
I've had work commitments	39	8.8
Its been too hot	9	2.0
I've had a cold	12	2.7
I've too much homework	25	5.6
I've gone out a lot	27	6.1

Validation of the Performance Uncertainty

All descriptive results are presented in Table 32. Before the first test, participants in the non-contingent failure group ($M = 3.47$) reported a similar level of control before the first test as participants in the non-evaluative control group ($M = 3.28$). Before the second test, participants in the non-contingent failure condition ($M = 2.50$) expressed having lower feelings of control than participants in the non-evaluative control group ($M = 3.20$).

*Table 32**Descriptive Statistics for Perceptions of Control*

Group	<i>M</i>	<i>SD</i>
<u>Pre Experimental Manipulation</u>		
Non-contingent failure	3.47	1.03
Non-evaluative control	3.28	.88
Total	3.38	.96
<u>Post Experimental Manipulation</u>		
Non-contingent failure	2.50	.89
Non-evaluative control	3.20	.86
Total	2.84	.94

The predicted direction for the results was that participants in the non-contingent failure condition would report lower perceptions of control before the parallel test than participants in the non-evaluative control condition. The results of the ANCOVA are presented in Table 33. The result of a test of between-subjects effects for the main effect of feedback contingency group was

significant indicating that when pre-test perceptions were statistically controlled participants differed in their perception of control for the second test because of feedback contingency condition. Using η^2 as the measure of effect size, feedback contingency group accounted for 56 per cent of the total variability in perception of control score.

Table 33

Summary of ANCOVA Results for Perception of Control

Source	<i>df</i>	<i>F</i>	η^2	Power
Between Subjects				
FBC	1	61.91*	.24	1.0
Pre Control	1	102.38*	.34	1.0
<i>S</i> within-group error	196	(.51)		

Note. FBC = Feedback Contingency Condition. Values enclosed in parentheses represent mean square errors. *S* = subjects.

* $p = .0001$

Pairwise comparisons between the two groups showed that participants in the non-contingent failure group differed significantly from participants in the non-evaluative group ($p = .0001$). Using Cohen's d for effect size, there was large effect size ($d = .78$) between the non-contingency failure group and the non-evaluative group, which is equal to 43 per cent non-overlap between mean scores. It seems clear that the manipulation was successful in the expected direction. The mean score of the non-contingent failure group is equal to the 76th percentile for the non-evaluative group. The results are supportive of the assumption that participants exposed to the feedback contingency experienced significantly more uncertainty about their performances on the second test than

did participants in the non-evaluative condition. Having established that the experimental manipulation had the desired effect on participants' perceptions of performance certainty, the tests of the hypotheses proceeded.

Reliability Estimates of Independent Variables

Descriptive statistics, alpha, distribution, and confidence intervals for the mean (95%) for the independent variables are presented in Table 34.

Table 34

Descriptive Statistics for Variables Used to Predict Situational Self-Handicapping

Variables	<i>M</i>	<i>SD</i>	Alpha	95% C.I.		Skewness	Kurtosis
				Lower	Upper		
1. SE	60.18	9.93	.78 ^a	58.77	61.55	.72	.34
2. SEC	73.35	20.55	.78 ^b	70.48	76.22	-.01	-.68
3. PSW	16.38	2.94	.66 ^c	15.96	16.79	.80	-.16
4. PSC	10.67	2.76	.77 ^c	10.28	11.06	.45	.36
5. TSSE	62.03	19.39	.97 ^c	59.35	64.75	-.21	-.82

Note. SE = Global Self-esteem, SEC = Certainty of Self-esteem, PSW = Physical

Self-worth, PSC = Physical Sport Competence, TSSE = Task Specific

Self-efficacy, ^a Kuder Richardson 21, ^b Split half, ^c Cronbach's Alpha.

Reliability of all measures fell within acceptable limits. Feedback contingency was a categorical variable and dummy coded (0 = *non-evaluative control* and 1 = *non-contingent failure*).

Regression Estimates for the Variables used to Predict Self-handicapping

As there was no theoretical basis for the order of entry of the variables, all variables were entered in a standard regression. The unstandardised regression coefficients (B), the intercept, the standardised regression coefficients (β), and the standard error for B are revealed in Table 35. The F test of partial regression coefficients was used to assess the significance of the predictor variables as main effects. A t test assessed the relative importance of each variable to the model.

A standard multiple regression was performed between self-reported performance disruption as the dependent variable with feedback contingency, task specific self-efficacy, physical sports competence, physical self-worth, self-esteem, and certainty of self-esteem as independent variables. Only the three independent variables of feedback contingency, task specific self-efficacy, and physical self-worth contributed significantly to the prediction of self-reported performance disruption.

The variable of feedback contingency accounted for 34 per cent of the variance when all other variables are partialled out. As feedback contingency was coded as a dummy variable (0 = *non-evaluative control*, 1 = *non-contingent failure*), participants in the non-contingent failure condition self-reported performance disruption at 17.34 per cent (constant = 4.13 + B). The variable of task specific self-efficacy was significant and negative. Partial correlation result for self-efficacy was 25 per cent. The variable of physical self-worth was significant and positive. Partial correlation value for physical self-worth was 25 per cent.

Table 35

Summary of Standard Analysis for Variables Predicting Self-reported
Performance Disruption (N = 196)

Model	<i>B</i>	<i>SE B</i>	β
Feedback Contingency	13.21	2.59	.34*
Task Specific Self-efficacy	-.27	.08	-.24**
Physical Sport Competence	-.78	.45	-.11
Physical Self-worth	1.34	.44	.20*
Level of Self-esteem	-.14	.14	-.06
Certainty of Self-esteem	.18	.16	.07

Note. $R^2 = .19$; $\Delta R^2 = .17$ ($p < .0001$). Model 2 (feedback contingency, task specific self-efficacy, physical self-worth); $R^2 = .18$; $\Delta R^2 = .17$ ($p < .0001$)

* $p < .0001$, ** $p = .002$

The remaining variables of physical sport competence, self-esteem, and certainty of self-esteem were correlated with self-reported performance disruption, .15, .06, and .10 respectively, but none contributed significantly to regression. Confidence intervals for *B* for each of the three independent variables contained zero, confirming that no significance linear relationship exists between these variables and self-reported performance disruption. Post hoc evaluation of the correlation for all variables revealed that it was significantly different from zero $F_{\text{change}}(6, 190) = 8.44$, $p < .0001$.

Trimming the non-significant independent variables from the regression, the three independent variables of feedback contingency, task specific self-efficacy,

and physical self-worth predicted 18 per cent (17% adjusted) of the variability in performance disruption. Post hoc evaluation of the correlation revealed that it was significantly different from zero $F_{\text{change}}(3, 196) = 14.43, p < .0001$.

Apparently, the level of self-reported performance disruption is an indirect result of the relationship between feedback contingency, task specific self-efficacy, and physical self-worth.

The results of the regression analysis showed that the combination of the three variables of feedback contingency condition, task specific self-efficacy, and physical self-worth were the strongest predictors of self-reported performance disruption. The negative weight for the variable of task specific self-efficacy showed that lower estimates of efficacy were associated with increases in performance disruption. The positive weight for physical self-worth showed that higher scores were associated with higher reports of performance disruption.

The results indicated that young people who had low estimates of self-efficacy for completing the task successfully but had high estimates of physical self-worth had a greater tendency to self-handicap before a second test after they had experienced failure on a first test. Using the regression equation helps illustrate the interpretation. Using the respective upper and lower limits for confidence intervals for task specific self-efficacy and physical self-worth, in the non-contingent failure condition, low estimates of efficacy (59.35) and high estimates of physical self-worth (16.79), the predicted self-reported performance disruption score would be 23.72 per cent. In contrast, in the non-evaluative condition the predicted score is 6.2 per cent.

Discussion

The purpose of this study was to explore the relationship between self-esteem estimates for the physical domain and self-handicapping. Although previous research has investigated the cognitive construct of self-esteem, to date, researchers have not examined the possible role of more domain specific constructs of self-esteem and self-efficacy expectations. The results of the investigation make apparent the cumulative strength of non-contingent failure, task specific self-efficacy, and physical self-worth are important predictors of self-handicapping. High physical self-worth and low task specific self-efficacy were related primarily to greater self-handicapping following failure.

In general, the results are consistent with Rhodewalt's (1990) contention that people with high self-esteem are more prone to self-handicap because they need to protect their self-image and Bandura's (1977) argument that people with low efficacy expectations avoid tasks or show less persistence. Previous research (Tice, 1991) indicates that people with high and low self-esteem do self-handicap but for different motives. Study 5 provided some support that young people with low self-esteem self-handicap after experiencing failure. Young people with low self-esteem reported greater performance disruption (i.e., they self-handicapped) after a non-contingent failure experience. Nonetheless, the measure of self-esteem was a global estimation of self-worth.

The present results suggest that the theoretical explanation of self-handicapping using the cognitive construct of self-esteem is more complex than originally thought. After experiencing failure, young people with high estimations of physical self-worth, but who co-commitmently have low efficacy expectations about success on the task have a greater tendency to self-handicap.

This result is opposite to the pattern found in Study 5 where low self-esteem was important. This reversal suggests that self-handicapping tendencies are not simply a result of estimates of global low- and high- self-esteem. Instead, the pattern of results suggests that the interplay between evaluative threat and cognitive constructs is complex. After experiencing failure, young people with high physical self-worth, but low efficacy estimates focus on protecting their image by strategically citing that experienced events would cause greater performance disruption. Thus, a failure on the subsequent test would not reflect low ability, because the failure can be attributed to the handicap rather than to ability.

One of the consistent findings in studies in this thesis is the association between non-contingent failure and self-handicapping. In the present study, young people who have positive self-images for the physical domain, yet had low efficacy about completing a specific task, showed a tendency to self-handicap after experiencing failure. It would appear that non-contingent failure is disruptive to young peoples' favourable competency images, when the failure is associated with self-relevant tasks.

The present results have numerous implications for teachers and coaches, but the result for physical self-worth and self-efficacy supports in general the original assertion that a positive yet tenuous self-concept is central to self-handicapping (Jones & Berglas, 1978). Pampering of children is one pathway to such vulnerable competency image. Although Jones and Berglas outlined this pathway, so did Adler (1969). From Adler's perspective, children who are pampered are destined to suffer debilitating feelings of inadequacy because it causes a loss of confidence in their own strengths. Pampering deprives children

of an opportunity to act in a manner reflecting competence. Thus, teachers and parent who constantly interfere in the process when children are developing notions of competence deprive them of developing coping skills. For example, teachers who try to ensure that children do not experience failure on tasks, inhibit the children's development in dealing with failure. A possible consequence is the development of a competency image that is positive yet vulnerable to evaluative threat because the child does not know how to handle failure situations. Such a process then diminishes their self-efficacy estimations, as pampering stops individuals from developing awareness that failure need not prove devastating and may, in fact, afford valuable lessons that provide an adaptive function in the future.

By generating inordinate fears of the imagined consequences of failure, pampering motivates many children to self-handicap as a means of averting disaster. One crucial consequence of self-efficacy estimates is that they influence the social settings that people will approach and determine how vigorously and persistently people pursue goals that are either difficult to attain or blocked by obstacles. Berglas (1988) suggested that people in such a situation become caught in a self-perpetuating cycle; low self-efficacy estimates -- self-handicap to continue to participate -- heighten anxiety -- low self-efficacy estimates. One consequence of viewing the world in this debilitating manner is that individuals view a wide range of settings as threatening and subsequently engage in self-handicapping in very evaluative circumstance. Thus, teachers and coaches who continually shield young people from failure in sports may unwittingly be contributing to the development of positive yet insecure self-concepts.

There are possible shortcomings for the results. The measure of self-efficacy was taken after the first test and after the feedback manipulation so it may reflect the impact of the experimental manipulation on participants' feelings of self-efficacy rather than participants' initial baseline feelings of efficacy. Thus, there may be some confounding of whether the efficacy estimates were true reflections of participants' initial estimates of success on the test or whether they reflected the effect of the feedback back manipulation.

Future research needs to extend these findings using a temporal design for self-efficacy (pre and post experimental manipulation). Moreover, future research needs to incorporate a success condition so that the full range of performance outcomes and self-handicapping are understood. There is also a need to assess what impact self-handicapping has on physical self-worth. For example, is there an augmentation benefit from using self-handicaps?

In sum, the results from the present study indicate that task specific self-efficacy and physical self-worth are important predictors of the tendency to self-handicap when evaluative threat stems from non-contingent failure.

CHAPTER 9

Summary of Findings and Implications for Further Research

I presented five research aims in Chapter 1 that guided the investigations in this thesis. The aims were based on four assumptions held for self-handicapping. For each of the assumptions, the review of literature highlighted limitations in the evidence. The limitations related to the use of deceptive protocols that indicated outcomes at the extreme ends of the performance spectrum, the use of non-random undergraduate and adult populations, and limited experimental testing across achievement domains and populations.

The guiding aim of the studies in this thesis was to experimentally test some of the assumptions held for self-handicapping when evaluative threat was to a physical self-concept. Moreover, the studies were limited to young people. What follows is a summary of the evidence for each of the assumptions tested in the investigations.

Young People use Self-handicaps when Faced with Evaluative Threat to Self-concepts

The results from five studies (Studies 2, 3, 4, 5, & 6) in this thesis indicated support for the assumption that young people self-handicap when they experience uncertainty about successful performance on a physical skill test. The results of the various frequency analyses showed that young people (13 to 16 years of age) reported various disruptive impediments before a parallel test of ability. There are several noteworthy aspects of young peoples' self-handicapping behaviour.

Young people consistently self-reported experiencing impediments as self-handicaps across evaluative conditions. The results of the two-way frequency analysis in several studies showed that regardless of evaluative condition, young people were sufficiently aware that a number of impediments could be used as mitigating excuse for possible flawed performances. One possible explanation forwarded for this phenomenon was that young people, regardless of reinforcement history, might have been “hedging their bets”. The term represents behaviour designed to alter the perception of being a favourite to succeed and is particularly relevant to the physical domain. What it may represent is the initial stages of self-handicapping and possibly a means of controlling arousal. In this sense, the young people might seek to reduce the amount of pressure on them to succeed by claiming an underdog status.

Despite most young people citing impediments in this thesis, when uncertainty was traced to non-contingent failure, young people reported higher levels of performance impediments than their counterparts in a control condition. The main implication for teachers and coaches of sport and physical education is that unproductive forms of feedback constitute a source of threat to self-esteem. Non-contingent feedback has two effects. It promotes uncertain self-images. Also, it engenders attributional uncertainty because people become uncertain as to how to attribute the cause of their achievement outcome. In the studies that comprised this thesis, feedback was evaluative and person based. Evaluative threat informs people about future performance outcomes. As Berglas (1989) put it, when feedback is also non-contingent, the message is “I’ve got good news and bad news: You’re the greatest!” (p. 157).

Possible future research into the use of self-reports might examine the link between the use of impediments and actual experiences of impediments. Snyder and Higgins (1988) speculated the use of illness symptoms would be observable in people who had come to recognise that they could use their illness symptoms as excuses for possible failure. Understanding how people determine the saliency of handicaps would help teachers and coaches understand how their behaviours contribute to people becoming dependent upon the strategy. It is unknown whether athletes have to be injured and experience the audience effect of their injuries before they understand the effectiveness of using injuries as a self-handicap.

Evidence for the Two Formulations for the Uncertainty Set for Self-handicapping

The evidence from Study 2 indicated that exposing young people to non-contingent failure reinforcement caused them to self-handicap, whereas exposure to non-contingent success reinforcement did not. Moreover, when young people did self-handicap, they used self-reports of performance disruption in preference to withdrawing effort. This pattern of self-handicapping behaviour was evident for males and females. Two main conclusions were proposed for the results. In general, it was concluded that the results supported the Snyder and Smith (1982) hypothesis that failure is an antecedent condition for performance uncertainty and hence self-handicapping whereas there was no support for the Jones and Berglas (1978) non-contingent success hypothesis. There were a number of explanations for the lack of support for Berglas and Jones' hypothesis in this thesis. The nature of the threat posed by the "one off" non-contingent success protocol may have contributed to the lack of support for the research hypothesis. Specifically, at the end of the testing session, young people in the non-contingent

success condition would have had a 50-50 record. Such a performance outcome presents an ambiguous evaluation context and therefore young people in such a situation may not feel sufficiently threatened to self-handicap.

The support for the use of self-avowals by young people to self-handicap shows the versatility of this type of handicap. Young people who felt anxious about their performances were able to alleviate their concerns (albeit possibly temporally) by using excuses to cloud the link between outcome and ability. Future research should address the issue of how young people respond to evaluative threat caused by non-contingent success. Research within the physical domain should focus on other types of behavioural handicaps. Such possibilities include the use of other enhancement as a means of self-handicapping. Another possible avenue of investigation is the use of effort withdrawal by young children.

Support for the Assumptions for Individual Difference Variables in the use of Self-Handicapping.

Evidence for the third assumption was gained through four different investigations (Studies 3, 4, 5, & 6). Each investigation assessed different individual difference variables. The following summary is divided into the separate research questions addressed in each of the studies.

Evidence for the Onset of Self-Handicapping

Study 3 was an investigation into the onset of self-handicapping. This was achieved by exploring differences in the use of self-reports of performance disruption between two age groups. Based on the Piagetian notion of how causal schemes are reliant upon cognitive maturity, I predicted that young people aged

10 would not be able to use the self-reports in an comprehensible manner. The evidence from Study 3 showed that following failure, young people aged 13 self-handicapped by reporting greater amounts of performance disruption than their counterparts in a non-evaluative condition and young people aged 10 in both feedback conditions. Young people aged 10 who experienced failure did self-handicap by using self-reports.

One suggestion for the lack of self-handicapping shown by young people aged 10 was that they might lack the cognitive maturity to understanding how a verbal report of disruption could serve as an excuse. It was noted that some young people aged 10 did self-report impediments but were unable to crystallise these into an estimation of the severity that they would have on their performances. The implication of this suggestion was that the young people might have limited self-handicapping strategies available to them. Thus, young people may self-handicap by using behavioural types of self-handicapping such as effort withdrawal. The implications for teachers and coaches is that young children may have limited means of dealing with performance anxiety, and unable to use self-reports to buffer performance anxiety they are forced to use effort withdrawal. Teachers and coaches need to be aware that such behaviour strategies are not laziness on the part of children but a means for them to protect the self. Future research should examine the use of behavioural strategies as self-handicaps in younger people.

Evidence for Achievement Goal Orientation and Self-Handicapping

The investigation in Study 4 explored the relationship between achievement goal orientation and self-handicapping. The link between self-handicapping and

achievement goal orientation was established in the overview of goal achievement theory. The literature overview underscored that the notion that individuals differ in the way that they use diagnostic information to assess their successes at achievement tasks. Two terms, ego-orientated and task-orientated defined the individual orientations in determining success from attempts at achievement tasks. The term ego-orientated described individuals who use diagnostic information from how other individuals performed to make a judgment about their personal competencies. The term task-orientated described individuals who prefer to gain their diagnostic information about successes from performance standards based on their own definitions of personal competency.

The review of literature pointed to a relationship between self-handicapping and ego-orientation. Nonetheless, shortcomings to the evidence related to methodological problems and problems associated with a lack of information. Also, some evidence described trait self-handicapping playing a role in the relationship. The results from Study 4 were consistent with previous research. Of the predictor variables - - feedback contingency (*non-contingent failure & non-evaluative control*), achievement orientation (*ego-orientation & task-orientation*), two indices of trait self-handicapping (*trait excuse-making & trait effort-expended*) - - only feedback contingency condition and ego-orientation were significant and important variables. Together these two variables explained 45 per cent of the variation in self-reported performance disruption. The variables of task orientation, the two indices of trait self-handicapping, and gender were not significant predictors of self-handicapping. Feedback contingency condition and ego-orientation had positive relationships indicating that failure feedback and higher levels of ego-orientation were associated with a

greater tendency to self-handicap. The interpretation was that young people who experience failure on self-relevant test and who determine success by using other reference standards have a greater tendency to self-handicap.

Evidence for the Relationship between Self-Esteem and Self-Handicapping

Two investigations (Studies 5 & 6) explored the assumption of a relationship between self-esteem and self-handicapping. The first investigation replicated previous studies to assess the contributions of global self-esteem and certainty of self-esteem in explaining the variance in self-handicapping under failure conditions. The results of a regression analysis showed consistency with the low self-esteem hypothesis. The two variables of non-contingent failure and self-esteem were the two strongest predictors of self-handicapping. Self-esteem as measured by a global index (Coopersmith's Self-esteem Inventory) was negatively related to self-handicapping. The interpretation for the results was that the young people who experienced failure on a first test of physical ability, and whose global feelings of their self-worth were low, reported more performance disruption than their counterparts who had higher estimates of their global self-worth. The interpretation was that the direction of the result for level of self-esteem was consistent with the Snyder and Smith (1982) hypothesis.

Nonetheless, a possible caveat existed as the Snyder and Smith (1982) hypothesis is predicated on certainty of self-esteem and not level of self-esteem. Their results related to low certainty of global self-esteem, not low global self-esteem. The results were consistent with those of Tice (1991), who demonstrated that low self-esteem was related to self-handicapping. Within the discussion, the issue of an empirical-conceptual disparity existed in the testing of global self-

esteem. Specifically, most experimental protocols contained a threat to a specific aspect of self-esteem (i.e., academic ability) but measured self-esteem using a global index. The argument was forwarded that the assumption should be investigated using measures that reflected the current conceptualisation of self-esteem.

Study 6 explored the relationship between self-handicapping and self-esteem using the domain specific measures from the Physical Self-Perceptions Profile (Fox & Corbin, 1989) to measure self-esteem associated with the physical domain. The first index, the Physical Self-worth subscale, measured perceptions of self-worth associated with the physical domain and the Physical Sport Competency subscale, measured self-esteem associated with feelings about being competent in sport. Added to these self-reports was a self-report associated with feelings of efficacy specific to overarm throwing. Finally, a measure of global self-esteem and certainty of global self-esteem were included.

The results showed that feedback contingency condition, task specific self-efficacy, and physical self-worth were significant and important predictors of self-handicapping. The indication from the beta coefficients was the physical self-worth was positively associated with self-handicapping and task specific self-efficacy was negatively related to self-handicapping. The result highlighted the complex relationship that self-esteem shares with self-handicapping. It would seem that when concerns about performance are linked to failure, young people who have high regard for the self-judgments related to the physical domain, but have low efficacy estimates for completing a specific task have a greater tendency to self-handicap.

In sum the evidence from Studies 4, 5, and 6 indicated that the assumptions for individual differences for self-handicapping are not universal to all achievement domains. Young people who display certain personality characteristics seem more predisposed to performance anxiety about outcomes and hence use self-handicaps to help them maintain participation evaluative situations.

There seems to be key personality variables that render young people more prone to effects of non-contingent failure than others. These are high ego-orientation, high physical self-worth, and low task specific self-efficacy. These personality variables are somewhat consistent with Jones and Berglas' (1978) original view that people who self-handicap are particularly concerned to protect a desired but tenuous self-image. On the strength of the results from Study 6, young people with a high regard for their physical self-worth but low efficacy expectations were most prone to handicap. This result suggests that high self-esteem might not be sufficient to cause young people to self-handicap.

Conclusion

In sum, I set out in this thesis to test some assumptions for self-handicapping within the limitations of young people exposed to performance uncertainty on an evaluative task in the physical domain. In general seems that some of the assumptions hold across achievement domains and others do not. For young people, concerns about performance linked to non-contingent feedback cause them to self-handicap by using self-avowals, but not by withdrawing effort. Moreover, performance concerns linked to non-contingent success feedback were not linked to self-handicapping. This pattern of self-handicapping was

consistent across gender groups, but was not evident for young people 10-years-of-age. Subsequently, for young people aged between 13 and 16, self-handicapping was positively associated with an ego-orientation. Moreover, there was an association with self-esteem and self-efficacy and self-handicapping, with young people who were high in physical self-worth but low in task specific self-efficacy self-handicapping before a subsequent evaluation of their physical ability.

Finally, there are a number of future research issues in the area of self-handicapping. First, there is a need for studies to address the temporal issue surround self-handicapping and whether self-avowals lead to behavioural self-handicapping. Second, there is a need for more research to explain the use of effort withdrawal as a means of self-handicapping in physical activity. Finally, there is a need to develop a dispositional measure of self-handicapping specific to sport and physical activity to allow further research into individual difference variables.

APPENDIXES

Appendix A
Survey of Frequency of Use of Physical Skills Test
and Suitability of Physical Skills Tests

Below is a list of physical skill tests that have been requested in the past 12 months from the Curriculum Officer. Could you indicate which tests you have used in the previous 12 month period by circling the word YES. Some of the tests have TGMD in front of them. This indicates that the test is from the Test of Gross Motor Development (Gallahue, 1989). These tests are identical to those contained in the Fundamental Skills Assessment Booklet (Walkley, 1999).

For each test where you have indicated YES, I would now like you to rate the test on several criteria. The criteria are (a) ease of use (how easy is the test to administer to children), (b) minimisation of class time (how easy is it set the test up and run), (c) suitability of the test for age groups (can you use the test with all children), and (d) suitability of the test for each gender (does the test discriminate). For each test that you selected, please rate each on the four criteria use the rating scale. If you feel the test is not suitable for that criteria you would circle number 1, if you feel the test is highly suitable for the criteria then you would circle the number 10. There are no right or wrong answers. Circle the number that corresponds with your rating.

1 ___ 2 ___ 3 ___ 4 ___ 5 ___ 6 ___ 7 ___ 8 ___ 9 ___ 10

not suitable

highly suitable

Are you currently teaching in a
 Primary School Yes
 High School Yes
 District High Yes

Physical Skill Test

	YES	NO
1. (TGMD) two handed strike		
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	

2. (TGMD) stationary bounce	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	
3. (TGMD) catch	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	
4. (TGMD) kick	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	
5. (TGMD) overhand throw	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	
6. (TGMD) underarm throw	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	
7. (TGMD) balance	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	

8. (TGMD) run	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	
9. (TGMD) gallop	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	
10. (TGMD) leap	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	
11. ACHPER 20 metre shuttle run	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	
12. ACHPER flexed arm hang	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	
13. Broad Jump	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	

14. Australian Institute of Sport vertical jump	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	
15. Australian Institute of Sport Basketball throw	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	
16. 12 minute run	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	
17. Agility run	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	
18. Punt kick (Walkley)	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	
19. Static Balance	YES	NO
ease of use	1 2 3 4 5 6 7 8 9 10	
minimisation of class time	1 2 3 4 5 6 7 8 9 10	
suitability of the test for age groups	1 2 3 4 5 6 7 8 9 10	
suitability of the test each gender	1 2 3 4 5 6 7 8 9 10	

Are there any other tests of physical ability that you have used in the past 12 months that are not listed here? If so please list them in the space below.

Thank you for your time and effort. Please send your response sheet in the replied paid envelope that accompanies this questionnaire.

Appendix B
Survey of the Frequency of Use and Suitability of Physical Skills Tests

Dear Health and Physical Education Teacher

My name is Dean Cooley and I am enrolled in a PhD. at the University of Victoria. As part of my PhD. work, I am trying to identify the most frequently used and suitable tests of physical skill. Based on the results of this survey, one test will be identified to be included in the remaining studies of my thesis. If you agree to take part in the study, all that is required of you is to identify tests that you have used and then rank each test in terms of its suitability. All responses are anonymous and no one individual or organisation will be identified. If you wish not to take part, please disregard this information and thank you for considering my request.

Appendix C
Face Validity Scale for Overarm Throwing Test

Thank you for taking part in this study. I hope that you found it interesting and informative. You have just received your score on the paper provided. What I would like to know is your feelings about the score and what it reflects. There are no right or wrong answers to this question, just your own feelings. No one apart from me will see your response. Please respond to the following question
Thank you for agreeing to take part in this research. Before you take part in the research, I would like to find out some background information. You and I will only know this information. No one else will see this information.

When is your Birthday? / /

How old are you NOW?

13 14 15 16

Gender: MALE FEMALE

Please complete the following question after you have finished the test.

The following question relates to how you FEEL about your test result and whether you think your result is a true reflection of your physical ability. Answer the question as honestly as you can. Circle the score that best reflects your feelings.

Do you think the test score that you have just received is a true reflection of your overarm throwing ability?

1	2	3	4	5
Strongly Agree	Agree	Unsure	Disagree	Strongly disagree

Once again thank you for your time and effort.

Appendix D
Information Letter to Principals and HPE Teachers

Dear

In regards to our telephone conversation on please find the following information about the project. The project is part of my doctoral studies at the University of Victoria. My supervisor is Dr. Vance Tammen (Victoria University of Technology). The project has ethical approval from the University of Victoria. The project aim is to collect performance data on a test of overarm throwing ability. The performance scores will be used in later studies.

To meet the aim of the study, I need access to males and females aged between 13-16. I will need to have access to individuals on at least two occasions. On the first occasion, I will need to talk to the students to give them information about the project. This phase can be completed at the end of a teaching session. Once a list of students who have consented to take part in the study is finalised I will need access to them on a second occasion. Access to all students will be at the discretion of the teachers in charge.

On all occasions, I will be respectful of the needs of the teacher and the students. Thank you for considering my proposal and I will be in contact with you shortly to talk further.

Regards

Appendix E
Information Letter to Students

Study: Overarm Throwing Ability of Youth

Thank you for your interest in this project. The aim of this project is to pilot a novel test of overarm throwing. The performance data gathered from this pilot study will be used in other studies.

What Will I have to Do?

The task you will perform is to throw a ball with an overarm action at a target located on the floor 10 metres away. Between you and the target there will be a screen designed to block your vision of the target. You will participate in two trials, one morning during your normal physical education lesson and one after school. In each trial, you will have three attempts at throwing the ball at the target. At the end of the morning trial, you will be given a progress score. The throwing task should take no longer than 10 minutes. Your attitudes and perception to the test will be measured by a single question.

Your overarm throwing technique will be evaluated by your accuracy at hitting the target.

What will happen with my results?

All results will be anonymous and no one individual or organisation will be identified.

Will anyone else see me perform?

No other student will watch you throw and no one other than yourself and the investigator will know your result or your personal feelings about completing the task.

Since you are under the age of 18, you will need your parent (s) or guardian (s) consent. The consent form is included with this letter. Please ask your parent (s) or guardian (s) read the consent form and return the written consent form to your physical education teacher as soon as possible.

Appendix F
Parental Information Letter

My name is Dean Cooley and earlier this week I asked your child if they would be interested in participating in a study. Your child showed an interest in participating in this project. The project forms part of a doctoral research project being completed me.

What is the Project about?

The main objective of the project is to collect performance data on a test of overarm throwing.

Why is the study important?

The data gained from the present study will be used in further research designed to increase our understanding of how children respond to evaluation of their physical ability.

What will my Child have to do?

If you (and your child) consent to the participation, I will ask your child to complete two tests of a novel physical skill test. The test involves your child throwing a ball using an overarm throw at a target. Your child will be asked to have two trials at the test. In each trial, they will have three attempts at throwing the ball at the target. After completing the first test, I will give your child a score for both tests. I will ask you child to complete a self-report measure of their perceptions of the test.

How long will this take?

The throwing task should take no longer than 10 minutes. This will occur either during your child's physical education lesson or at another time that is convenient. In some cases were it is possible, your child may participate in the study after school.

Will other people know about my child's results?

No other student will watch your child's attempts at the test and all information gathered during the project will be strictly confidential. Written responses to the questionnaire will be completed on a coded response sheet so that only the investigator will be able to determine the identity of the respondent. All written information and results of the trials will be kept at the University of Tasmania under locked conditions. Only the investigators listed on the consent form will have access to the information for statistical analysis. No individual or group will be identified in the reporting of results of the project.

What will my children gain from being involved in the study?

The overarm throw is considered as a fundamental movement skill. It forms the basis of many of sports skills, such as the tennis and volleyball throw. It is an essential skill in many team sports such as cricket and softball. All participants will receive an evaluation of their proficiency at the overarm throw. This will be given to all participants at the end of the study.

Will my Child be adversely affected in any way?

As no student's score will be compared to another there is little possibility that children will feel uncomfortable during the testing procedure. If they feel particularly upset about their involvement please contact me or one of the supervisors listed on the bottom of the consent form. Your child or yourself has the right at any stage of the project to stop their participation without prejudice. Any work that they have completed will be destroyed and not used in the project. You have the right to refuse consent without prejudice.

What needs to happen for my child to participate?

First your child needs to agree to participate. They can do this by signing the consent form. Second, you also need to countersign the form agreeing to allow your child to participate. The consent forms are included with this letter. Please return the consent form to your child's physical education teacher as soon as possible.

What if I want to ask questions?

You may contact me by ringing the listed number. Your child will be notified of when they are required to complete the overarm test.

Thank you for your co operation

Appendix G
Consent Forms
Victoria University of Technology

Consent Form for Subjects Involved in Research

INFORMATION TO PARTICIPANTS:

We would like to invite your son / daughter to be a part of a study into self-handicapping behaviour of youth.

I certify that the objectives of the experiment, together with any risks to my son / daughter associated with the procedures listed in the information sheet to be carried out in the experiment, have been fully explained to me.

CERTIFICATION BY SUBJECT

I,

of

certify that I am voluntarily giving my consent for my son / daughter to participate in the experiment entitled:

Self-Handicapping by Australian Youth in the Physical Domain

being conducted at Victoria University of Technology by: Dr. Vance Tammen,
Professor Lars McNaughton and Mr. Dean Cooley

and that I freely consent to participation involving the use on son / daughter of these procedures.

Procedures:

I certify that I have had the opportunity to have any questions answered and that I understand that I can withdraw my son / daughter from this experiment at any time and that this withdrawal will not jeopardise my son / daughter in any way.

I have been informed that the information my son / daughter provide will be kept confidential.

Signed: }

Witness other than the experimenter: } **Date:**

.....}

Any queries about your participation in this project may be directed to the researcher (Dr. Vance Tammen 039248001 or Mr. Dean Cooley 6324309. If you have any queries or complaints about the way your son / daughter have been treated, you may contact the Secretary, University Human Research Ethics Committee, Victoria University of Technology, PO Box 14428 MCMC, Melbourne, 8001 (telephone no: 03-9688 4710).

I would like further information Yes

I would like a copy of the final results of this project. Yes

Appendix H
Measure of Ego-relevance for the Physical Domain

How important are the outcomes of your efforts to YOU. Use the following scale to help you rate the importance of the outcomes of your attempts at sport and physical activity. Circle the number that best fits your feelings.

1	2	3	4	5	6	7	8	9
not at all								extremely
important								important

Thank you for completing these items. I will contact you shortly to let you know when I will need you to attend again.

Appendix I
Measure of Perceived Control Over Test Outcome

The following question relates to how you feel about being able to control the outcome of the test you are about to complete. Any number of factors can influence how you feel about being in control. For example, if you can achieve the outcome that you want you might write a 5 but if you do not understand why you have achieved an outcome you might a lower score. There are no right or wrong answers, just your own feelings. Remember only you and I will know what you write. If you need any help with this question, please ask me. Use the following

1	2	3	4	5
no				high
control				control

With regard to the upcoming test, how confident are you that you have control over the test outcome?

I feel that I

Appendix J
Situational Impediments Checklist

Sometimes there are reasons that people may not perform at their best when they are completing physical skills. Below are some things that you may have experienced in the last week that may cause you to not perform at your best ON YOUR NEXT ATTEMPT. Do any of the following reasons apply to you? There are no right or wrong answers as all people are different and experience different reasons in their everyday life. Circle Yes if you believe that any of the following may affect your performance, if not circle NO.

I may not perform well today because....

1. I am tired.....	Yes	No
2. I didn't understand the instructions	Yes	No
3. I am injured.....	Yes	No
4. I never get to play in the important positions	Yes	No
5. I am feeling sick/ill	Yes	No
6. I have had other social commitments/activities	Yes	No
7. I am distracted by personal problems	Yes	No
8. I am untrained	Yes	No
9. I have had fights or arguments.....	Yes	No
10. I think the task is too hard	Yes	No
11. I have had lots of commitments this week.....	Yes	No
12. I have a cold	Yes	No
13. Important people (friends, family, etc) are upset with me	Yes	No
14. Coach ignored me	Yes	No
15. I've experienced team conflict	Yes	No
16. I don't have the correct equipment	Yes	No
17. I don't like performing in this room	Yes	No
18. I have done this test before	Yes	No
19. I stayed out late last night	Yes	No
20. It's been cold	Yes	No
21. I got drunk	Yes	No
22. I been thinking about quitting sport	Yes	No
23. I have not devoted enough time to training	Yes	No
24. Others are better than me	Yes	No
25. It is only a trial to see how I go	Yes	No

If there are other factors that you have experienced in the previous 24 hours that are not listed, please write them in the space below

I would like you to think about those impediments that you have ticked.

If you think they may cause you not to perform well on your next attempt, try to place a figure on the amount your performance will be disrupted.

If you feel that your performance will not suffer, then you would write the number one, if you believe you will not be able to perform at all you would write 100. Write your percentage on the line below

1 _____ 100

(no disruption)

(complete disruption)

Appendix K
*Information Letter to Principals and HPE Teachers for the Project: Self-
Handicapping by Australian*

Dear

In regards to our telephone conversation on please find the following information about the project. The project is part of my doctoral studies at the University of Victoria. My supervisor is Dr. Vance Tammen (Victoria University of Technology). The project has ethical approval from the University of Victoria. The project aim is to collect performance data on a test of overarm throwing ability. The performance scores will be used in later studies.

To meet the aim of the study, I need access to males and females aged between 13-16. I will need to have access to individuals on a number of occasions. On the first occasion, I will need to talk to the students to give them information about the project. This phase can be completed at the end of a teaching session. Students who are interested in participating in the study will then take home information about the study and consent forms for their parents.

Once a list of students who have consented to take part in the study is finalised I will need to access to them to organise a time and place for them to take part in the study. I acknowledge that access to all students will be at the discretion of the teachers in charge.

On all occasions, I will be respectful of the needs of the teacher and the students. Thank you for considering my proposal and I will be in contact with you shortly to talk further.

Regards

Appendix L
Information Letter for the Project: Self-Handicapping by Australian Youth in the Physical Domain

Thank you for your interest in this project. The aim of this project is to collect information on your attitudes and response to your scores on a physical skill test.

What is required?

Participants will perform is to throw a ball with an overarm action at a target located on the floor 10 metres away. Between participants and the target there will be a screen designed to block their vision of the target. Participants will have three attempts at throwing the ball at the target. This should take no longer than 10 minutes.

Will participants have to do anything else?

Participants will be allocated to one of number of groups. Each group will receive different information. This is necessary so that I can determine differences between groups in how they react to information associated with the test. After the first attempt, I will ask participants to complete some questions about events that they might have experienced in the last week.

Will anyone else know what participants have done?

No one else apart from me will watch participants complete the study. The participant and I will only know any information given.

Will there be a negative to taking part?

In some cases, participants may feel uncomfortable about their results of the throwing task. This is a natural reaction, however, if they feel particularly upset they can stop at any time. Participants and yourself may at any stage of the project stop participants' involvement. Any work that participants have completed will be destroyed and not used in the project.

Since participants are under the age of 18, they will need their parent (s) or guardian (s) consent. The consent form is included with this letter. Please read the consent form and return the written consent form as soon as possible. If participants agree to participate in the study, it is asked if they could complete the attached question below. The question relates how the importance of doing well in sport.

One question I would like to ask you is about your feelings when you are performing tasks that are related to sport and physical activity.

Appendix M
Thank You Letter

Dear Participant

Thank you for showing an interest in participating in my research project. An important part of the project is the random selection of young people. To ensure this I have used a computer programme to select participants into the study. Selection was based on a number allocated to each individual there was no criteria other than a number used for selection into the age and gender groupings. Unfortunately, your number was not selected for the study. I thank you and your parents for the time and effort in considering taking part in the study.

Regards

Appendix N
Feelings About Sport Questionnaire

Thank you for agreeing to take part in this research. Before you take part in the research, I would like to find out some information about you. You and I will only know this information. No one else will see this information.

When is your Birthday? / /

How old are you NOW?

10 11 12 13 14 15 16 17

Gender: MALE FEMALE

Which of the following sports do you play? Circle the sports that you play. If your sport is not listed please included it in the open response section

Australian Rules Soccer Netball Hockey Softball

Cricket Volleyball Basketball Golf Athletics Cycling

Touch Football Rugby Martial Arts Competitive Swimming

Volleyball

Other Sports (please list).

On the following pages you will find some other questions. Please fill them out when you are directed to.

Appendix O
Self-handicapping Scale (Jones and Rhodewalt, 1986)

Please read the following statements and respond to them as indicated. Only yourself and I will know your responses. There are no right or wrong answers, only how you feel.

The following questions relate to the way in which you feel about yourself and sport. Please answer all questions as best you can.

Read each statement and then respond to how you feel about the statement by circling the number. Use the following ratings. If you do not understand a question or know the meaning of a word, please ask me and I will tell you. There are no right or wrong answers. Use the following rating scale

1 = completely disagree, 2 = disagree very much, 3 = disagree a little,

4 = agree a little, 5 = agree pretty much, 6 = agree very much

1. When I do something wrong, my first reaction is to blame the situation.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____

Completely
disagree

Agree
very much

2. I tend to put things off to the last moment.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____

Completely
disagree

Agree
very much

3. I suppose I feel "under the weather" more than most people.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____

Completely
disagree

Agree
very much

4. I always try to do my best no matter what.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____

Completely
disagree

Agree
very much

5. I am easily distracted by noise or my own thoughts when I try to read.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____

Completely
disagree

Agree
very much

6. I try not to get too intensely involved in competitive activities so I won't hurt too much if I lose or do poorly.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____

Completely
disagree

Agree
very much

7. I would do a lot better if I tried harder.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____
 Completely disagree Agree very much

8. Someday I might get it all together.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____
 Completely disagree Agree very much

9. I sometimes enjoy being mildly ill for a day or two because it takes off the pressure.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____
 Completely disagree Agree very much

10. I would do much better if I didn't let my emotions get in the way.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____
 Completely disagree Agree very much

11. I admit that I am tempted to rationalise when I do not live up to others' expectations.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____
 Completely disagree Agree very much

12. I often think I have more than my share of bad luck in sports, card games, and other measures of talent.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____
 Completely disagree Agree very much

13. I overindulge in food and drink more often than I should.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____
 Completely disagree Agree very much

14. Sometimes I get so depressed that even easy tasks become difficult.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____
 Completely disagree Agree very much

Thank You

7. Something I learn makes me want to go and practice more

1 _____ 2 _____ 3 _____ 4 _____ 5 _____
Strongly Disagree Disagree Unsure Agree Strongly
Disagree Agree

8. Skill I learn really feels right

1 _____ 2 _____ 3 _____ 4 _____ 5 _____
Strongly Disagree Disagree Unsure Agree Strongly
Disagree Agree

9. I do my very best

1 _____ 2 _____ 3 _____ 4 _____ 5 _____
Strongly Disagree Disagree Unsure Agree Strongly
Disagree Agree

10. I work really hard

1 _____ 2 _____ 3 _____ 4 _____ 5 _____
Strongly Disagree Disagree Unsure Agree Strongly
Disagree Agree

11. I learn a new skill and it makes me want to practice more

1 _____ 2 _____ 3 _____ 4 _____ 5 _____
Strongly Disagree Disagree Unsure Agree Strongly
Disagree Agree

12. I learn something that is fun to do.

1 _____ 2 _____ 3 _____ 4 _____ 5 _____
Strongly Disagree Disagree Unsure Agree Strongly
Disagree Agree

Appendix Q
Global Measure of Self-Esteem (Coopersmith, 1990)

The following questions relate to your feelings about yourself. There are no right or wrong answers, just how you feel. Remember, just you and I will know what you have written. Try to answer the questions as honestly as you can.

Read each of the following statements. If a statement describes how you usually feel circle the words "LIKE ME." If the statement does not describe how you usually feel, circle the words "UNLIKE ME." There are no right or wrong answers.

When you have finished the questions on the left hand side, I would like you to complete the scale on the right hand side. The scale on the right hand side relates to your answers on the left. I would like to know how certain you are of the answer you gave for each question on the left. Use the scale listed below. There are no right or wrong answers, just an estimate of how certain you are for each of your answers.

Use the following scale for the left hand side questions

1 _____ 2 _____ 3 _____ 4 _____ 5

Very uncertain Very certain

- | | | | | | |
|---|---|---|---|---|---|
| 1. Things usually do not bother me. | | | | | |
| Like ME Unlike ME | 1 | 2 | 3 | 4 | 5 |
| 2. I find it very hard to talk in front of class. | | | | | |
| Like ME Unlike ME | 1 | 2 | 3 | 4 | 5 |
| 3. There are lots of things about myself I'd change if I could. | | | | | |
| Like ME Unlike ME | 1 | 2 | 3 | 4 | 5 |
| 4. I can make up my own mind without too much trouble. | | | | | |
| Like ME Unlike ME | 1 | 2 | 3 | 4 | 5 |
| 5. I am a lot of fun to be with. | | | | | |
| Like ME Unlike ME | 1 | 2 | 3 | 4 | 5 |
| 6. I get upset easily at home. | | | | | |
| Like ME Unlike ME | 1 | 2 | 3 | 4 | 5 |
| 7. It takes a long time to get used to anything new. | | | | | |
| Like ME Unlike ME | 1 | 2 | 3 | 4 | 5 |
| 8. I am popular with kids my own age. | | | | | |
| Like ME Unlike ME | 1 | 2 | 3 | 4 | 5 |

9. My parents usually consider my feelings.						
Like ME	Unlike ME	1	2	3	4	5
10. I give in very easily.						
Like ME	Unlike ME	1	2	3	4	5
11. My parents expect too much of me.						
Like ME	Unlike ME	1	2	3	4	5
12. It's pretty tough to be me.						
Like ME	Unlike ME	1	2	3	4	5
13. Things are all mixed up in my life.						
Like ME	Unlike ME	1	2	3	4	5
14. Kids usually follow my ideas.						
Like ME	Unlike ME	1	2	3	4	5
15. I have a low opinion of myself.						
Like ME	Unlike ME	1	2	3	4	5
16. There are many times when I would like to leave home.						
Like ME	Unlike ME	1	2	3	4	5
17. I often feel upset at school.						
Like ME	Unlike ME	1	2	3	4	5
18. I'm not as nice looking as most people.						
Like ME	Unlike ME	1	2	3	4	5
19. If I have something to say, I usually say it.						
Like ME	Unlike ME	1	2	3	4	5
20. My parents understand me.						
Like ME	Unlike ME	1	2	3	4	5
21. Most people are better liked than I am.						
Like ME	Unlike ME	1	2	3	4	5
22. I usually feel as if my parents are pushing me.						
Like ME	Unlike ME	1	2	3	4	5
23. I often get discouraged at school.						
Like ME	Unlike ME	1	2	3	4	5
24. I often wish I was someone else.						
Like ME	Unlike ME	1	2	3	4	5
25. I can't be depended upon.						
Like ME	Unlike ME	1	2	3	4	5
26. I never worry about anything.						
Like ME	Unlike ME	1	2	3	4	5
27. I am pretty sure of myself.						
Like ME	Unlike ME	1	2	3	4	5

28. I'm easy to like.

Like ME	Unlike ME	1	2	3	4	5
---------	-----------	---	---	---	---	---

29. My parents and I have a lot of fun together.

Like ME	Unlike ME	1	2	3	4	5
---------	-----------	---	---	---	---	---

Appendix R
The Physical Self-Perception Profile:
Physical Self-worth Sub-scale (Fox, 1989)

What Am I Like?

The following are statements, which allow people to describe themselves. There are no right or wrong answers since people differ a lot. First, decide which one of the two statements best describes you. Then go to that side of the statements and check if it is just 'sort of true' or really true ' for you.

REMEMBER FOR EACH QUESTION ONLY TICK ONE OF THE FOUR BOXES

1. Some people feel extremely proud of who they are and what they can do physically

Really true of me Sort of true for me

But

Others are sometimes not quite so proud of who they are physically

Really true of me Sort of true for me

2. Some people are sometimes not so happy with the way they are or what they can do physically

Really true of me Sort of true for me

BUT

Others always feel happy about the kind of person they are physically

Really true of me Sort of true for me

3. When it comes to the physical side of themselves some people do not feel confident

Really true of me Sort of true for me

BUT

Others seem to have a real sense of confidence in the physical side of themselves

Really true of me Sort of true for me

4. Some people always have a really positive feeling about the physical side of themselves

Really true of me Sort of true for me

BUT

Others sometimes do not feel positive about the physical side of themselves

Really true of me Sort of true for me

5. Some people wish that they could have more respect for their physical selves

Really true of me Sort of true for me

BUT

Others always have great respect for their physical selves

Really true of me Sort of true for me

6. Some people feel extremely satisfied with the kind of person they are physically

Really true of me Sort of true for me

BUT

Others sometimes feel a little dissatisfied with their physical selves

Really true of me Sort of true for me

Appendix S
The Physical Self-Perception Profile:
Physical Sport Competence Sub-scale (Fox 1989)

What Am I Like?

The following are statements, which allow people to describe themselves. There are no right or wrong answers since people differ a lot. First, decide which one of the two statements best describes you. Then go to that side of the statements and check if it is just 'sort of true' or really true ' for you.

REMEMBER FOR EACH QUESTION ONLY TICK ONE OF THE FOUR

BOXES

1. Some people feel that they are not very good when it comes to playing sport

Really true of me Sort of true for me

But

Others feel that they are really good at just about every sport

Really true of me Sort of true for me

2. Some people feel that they are among the best when it comes to athletics

Really true of me Sort of true for me

BUT

Others feel that they are among the most able when it comes to athletics

Really true of me Sort of true for me

3. Some people are not quite as confident when it comes to taking part in sport activities

Really true of me Sort of true for me

BUT

Others are among the most confident when it comes to taking part in sporting activities

Really true of me Sort of true for me

4. Some people feel that they are always one of the best when it comes to joining in sports activities

Really true of me Sort of true for me
BUT

Others feel that they are not one of the best when it comes to joining in sports activities

Really true of me Sort of true for me

5. Some people are sometimes a little slower than most when it comes to learning skills in a sports situation

Really true of me Sort of true for me
BUT

Others have always seemed to be among the quickest when it comes to learning new sports skills

Really true of me Sort of true for me

6. Given the chance, some people are always one of the first to join in sports activities

Really true of me Sort of true for me
BUT

Other people sometimes hold back and are not usually among the first to join in sports

Really true of me Sort of true for me

Appendix T
Task Specific Self-Efficacy

Think about how confident you are at successfully throwing the ball into the scoring section of the target. Rate your degree of confidence by choosing a percentage from 1 (not confident) to 100 (absolutely confident). Write the exact percentage on the following line

1. How certain are you of being able to successfully throw the ball overarm?

1 _____ 50 _____ 100
not confident absolutely confident

2. How certain are you of being able to throw the ball overarm into the target area?

1 _____ 50 _____ 100
not confident absolutely confident

3. How certain are you that you will hit the centre target with all of your throws?

1 _____ 50 _____ 100
not confident absolutely confident

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